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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
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*Descriptors marked with an asterisk are included in the subject index.

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DISSERTATIONS FOR THE DEGREE OF CANDIDATE OF THE SCIENCES. 2 Sep 60, 4p. JPRS: 3776.
Order from OTS or SLA $1.10 60-31730

Trans. of Bulgarski Knigopis (Bulgaria) 1960, v. 64, no. 1, p. 37-39.

DESCRIPTORS: Students, *Theses, *Scientific reports, *Education, Philosophy, Economics, Medicine, Veterinary medicine.

Zolotukhin, V. K.
ON THE SCIENTIFIC SCENE: CONFERENCE ON PROBLEMS OF SCIENCE AND TECHNOLOGY (NO. 16, KHARKOV, MAY 59). 19 Sep 61 [18]p. MCL-1155/1. AD-265 687.
Order from OTS or SLA $1.60 62-13072

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1959, no. 4, p. 161-165.

DESCRIPTORS: *Conferences, *Scientific reports, *Bibliography, Industrial research, Scientific research, Social sciences, Language, Mathematics, Mechanics, Electrical engineering, Radio, Machines, Aircraft materials, Buildings, Turbine wheels, Turbines, Turbine blades, Aerodynamics, Metallurgy.

AGRICULTURE

Akopyan, E. Sh.
DECONTAMINATION OF FODDER CONTAMINATED WITH THE ANTHRAX PATHOGEN (Obezzaraahivanie Kormov Porazhennykh Vozbuditelem Sibirskoi Yazvy). 29 June 61 [11]p. 3 refs. JPRS: 9562.
Order from OTS or SLA $1.60 61-23898

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Veterinarnoi Sanitarii [i Ektoparazitologii]. Trudy (USSR) 1959, v. 15, p. 204-212.

DESCRIPTORS: *Anthrax, Decontamination, Animals, *Food, Cereal, Straw, *Formaldehyde.

Tests showed that hay and oats infected both with a spore culture of B. anthracoides and with a spore culture of the anthrax pathogen are completely disinfected with a 4% formaldehyde solution in 24 hours at a temperature of 16 to 23°C. A 2.5% formaldehyde solution does not disinfect infected hay and oats. Hay, oats and corn infected with dry STI vaccine are completely disinfected with a 4% formaldehyde solution in 24 hours at a temperature of 16-23°C. Under these conditions half as much does not assure complete disinfection. Hay and oats treated with 4% formaldehyde solution, after careful airing, are eaten readily by long- and short-horned cattle; oats, by chickens and small laboratory animals. Feeding such hay and oats for ten days did not produce any signs of intoxication in the experimental animals. A microbe suspension when applied by means of a sprayer in a quantity of 8.3 cc per every 100 square centimeters of surface of the hay does not penetrate to a depth of five centimeters.

Bolotin, A. A.
THE NATURE OF LOAD ON THE ENGINE AND THE POWER TRANSMISSION OF A TRACTOR (O Kharaktere Nagruzki na Dvigatel' i Silovuyu Peredachu Traktora) tr. by R. J. Zatorski. [1961] [18]p. (foreign text included) 6 refs. [CSIRO] Trans. no. 5166.
Order from OTS or SLA $1.60 61-28638

Trans. of Traktory i Sel'khozmashiny (USSR) 1959 [v. 2] no. 11, p. 15-19.

DESCRIPTORS: *Tractors, *Tractor engines, Load distribution, Transmissions, Transmission gears, Automatic transmissions, *Agricultural machinery.

Experiments with a crawler tractor KD-35 indicated that the load on the coupling, sprockets and crankshaft undergoes continuous fluctuations, which arise from (in most cases) a series of causes. Load variation curves on the coupling and the driving moments

on the sprockets make it possible to isolate four periodic components, while the curve which plots the changes in crankshaft resistance makes possible a fifth one. During all kinds of free running, the first component is absent. Additionally, the second component is absent during free running on hard surfaces and virgin soil. All force parameter curves under load also indicate isolated cases of temporary increases characterised by the coefficient of potential increase of load. In free-running, temporary increases occur only in the plowed field. Temporary increases form separate semi-waves of the first component with greater duration. Each component arises from factors peculiar to it. Components differ sharply from one another with respect to their amplitudes and especially their periods (or frequencies).

Knipper, N. V.
USE OF HIGH-FREQUENCY CURRENTS FOR GRAIN DRYING, tr. by E. Harris. [1961] [12]p. 2 refs. NIAE Trans. 85; [DSIR NLL] M 1915.
Order from OTS or SLA $1.60 61-13466

Trans. of [Vsesoyuzni] Nauch[no-Issledovatel'skii Institut] Elektrif[ikatsii] Sel'[skogo] Khoz[yaistva]. Nauch[nye] Trud[y] (USSR) 1956, v. 2, p. 185ff; reprint from Journal of Agricultural Engineering Research, (Gt. Brit.) 1959, v. 4, no. 4.

DESCRIPTORS: *Wheat, *Seeds, *Cereals, Dehydration, *High frequency, Frequency, *Electric currents, Effectiveness, Drying ovens, Heating, *Induction heating.

Use of a high-frequency current provides rapid heating of a thick layer of grain. Provided the heating temperature does not exceed the permissible limit, high-frequency drying preserves the germination and nutritional properties of the grain, or even improves them. The best results are obtained with combined drying when the heating of the grain mass and the transfer of moisture from the inside layers to the outside are effected by energy from a high-frequency field, while that moisture is removed by some other method, for example with air heated to 40-45°C. (Author)

Tyulenev, P. and Sosnin, V.
AUTOMATIC STEERING OF AN S-80 TRACTOR (Avtomaticheskoe Upravlenie Traktorom S-80). Aug 60 [11]p. RTS 1213.
Order from OTS or SLA $1.60 60-23612

Trans. of Tekhnicheskie Sovety MTS (USSR) 1959 [v. 20] no. 4, p. 2-6.

DESCRIPTORS: *Tractors, Vehicle seats, Motor vehicle operators, *Automatic navigators, Design, Operation, *Agricultural machinery.

The automatic steering mechanism for the S-80 tractor comprises the following additional parts: two special units installed on the power assistance mechanism; a rotary distribution valve box; mechanism for rotating the distribution valve, mounted in the same box as the valve; a push-button contact system (the push-button contact system IV is mounted in the cab of the tractor, on the right of the driver's seat, while the push-button contact system V can be mounted on any machine coupled to the tractor, such as a plough, seed drill, or combine); a special copying arrangement, used in ploughing; and the electrical wiring. (Author)

Animal Husbandry

ALL-UNION INSTITUTE OF EXPERIMENTAL VETERINARY SCIENCES: COLLECTION OF ARTICLES, tr. by S. Shoshan. 1961, 154p. 202 refs. PL-480 Agr.
Order from OTS $1.50 60-51055

Trans. of mono. Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Sbornik Rabot, Moscow, 1957 [153p.].

DESCRIPTORS: *Veterinary medicine, Animals, Agriculture, *Metabolism, Conditioned reflex, *Electrocardiography, Proteins, *Foot and mouth disease, Blood, Biochemistry, *Diptera, Pest control, Epidemiology, *Listeria, *Digestive system, *Diseases, Preventive medicine, Therapy, Air, Infections, Phagocytosis, Swine, Cholera, *Brucella, *Escherichia, *Virus vaccines, Leishmaniasis, Embryos, *Protozoa, *Parasites, Therapy, Pathology, Drugs.

Contents:
The study of phosphorus metabolism in dairy cows and calves using labeled atoms, by A. I. Vertunov
The characteristics of the conditioned reflex to aromatic stimuli in cattle, by N. I. Lozhkin
The biophysical interpretation of electrocardiograms in cattle, by B. S. Nikol'skii
The dynamics of the protein and protein fractions of blood serum from guinea pigs suffering from experimentally-induced foot-and-mouth-disease, by A. G. Malakhov
The biochemistry of the blood of cattle suffering from foot-and-mouth disease, by A. G. Malakhov
The elaboration and comparative evaluation of measures for combating flies in animal breeding farms, by N. S. Balyberdin
The epizoology of listerellosis in hogs, by V. I. Popov
Investigations into serological diagnosis of listerellosis in hogs, by M.I. Yashenkina
The etiology of gastrointestinal diseases in newborn lambs, by I. F. Avramenko
The prophylaxis and treatment of gastrointestinal diseases in newborn lambs, by I. F. Avramenko
An experiment on the air-borne infection of some animal species with listerellosis, by V. I. Popov
The opsono-phagocytic reaction in listerellosis in hogs, by M. I. Yashenkina
The adaptation of the swine fever virus to the organism of young rabbits, by A. K. Kvasnikov
The study of filtrable forms of Brucella (Strain no. 19) by V. A. Sergeev
An experiment on the application of the antivirus from cultures of B. coli commune, or chicken blood serum immune to Trichomonas for the therapy of trichomoniasis in cows, by E. M. Makhinya
A study of the microflora accompanying trichomoniasis in cattle, by E. M. Makhinya

On the differential diagnosis of Trichomonas foetus Riedmuller 1928, from other protozoa, by V. V. Petrovskii

The prophylaxis of theileriasis in cattle with naganin, by S. Z. Dubovyi

The survival and pathogeneity of Anaplasma kept in vitro, by I. I. Myalo.

Balbierz, Henryk.
NECROSIS OF TAILS IN SUCKLING PIGS (Obumieranie (Martwica) Ogonow u Prosiat Osekow) tr. by W. Kulerski. 1961 [12]p. 4 refs. PL-480 Agr.
Order from OTS $0.50 60-21249

Trans. of Weterynaria (Poland) 1957, v. 3, p. 169-178.

DESCRIPTORS: *Swine, Tails, Diseases, *Etiology.

Fedyushin, A. V.
NATURAL RESOURCES OF FEED PROTEIN IN RESERVOIRS OF THE USSR AND MEANS OF UTILIZING THEM FOR LIVESTOCK REQUIREMENTS (O Prirodnykh Resursakh Kormovogo Belka v Vodoemakh SSSR i Putyakh Ikh Isop'zovaniya dlya Nuzhd Zhivotnovodstva). 10 Aug 61, 12p. (Eng. summary omitted) 8 refs. Trans. A-1283.
Order from OTS or SLA $1.60 61-28435

Trans. of Zoologicheskii Zhurnal (USSR) 1961, v. 40, no. 2, p. 159-163.

DESCRIPTORS: *Proteins, *Food, Cattle, Feeding, *Animal industry

Practically inexhaustible, rich resources of feed protein are found in sea and fresh water plants and in some invertebrates. These plants and invertebrates are encountered in mass quantities and thus permit industry to exploit them and to utilize them as feed in crude or processed form, primarily for swine and domestic fowls. The uses of lakes on the territory of Western Siberia and of Northern and Western Kazakhstan alone open new, very rich sources of animal and plant protein feeds, and permit rearing there annually millions of head of domestic fowls at considerably less expenditures than in other regions of the Soviet Union where similar natural conditions do not exist. These areas have also other natural and economic conditions essential to the successful development of large poultry farms - a warm summer, an abundance of grain and grain waste products, dairy products, and boundless steppe and meadow grazing areas.

Gusev, V. F.
LENINGRAD SCIENTIFIC-RESEARCH VETERINARY INSTITUTE (Leningradskii Nauchno-Issledovatel'skii Veterinarnyi Institut). 14 Nov 61, 13p. Trans. V-1740.
Order from OTS or SLA $1.60 62-13450

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 330-337.

DESCRIPTORS: *Veterinary medicine, History, Scientific organizations, Scientific reports, *Animals, *Diseases.

This is a history of the development and work of the institute from its creation in 1919. The current fields of study are described with publications by institute members cited. These projects include research on brucellosis, vibriosis, swine plague, parasitic infections and other infectious diseases of domestic animals.

Kopyrin, A. V
SIBERIAN SCIENTIFIC-RESEARCH VETERINARY INSTITUTE (Sibirskii Nauchno-Issledovatel'skii Veterinarnyi Institut). 27 Oct 61, 8p. Trans. V-1737.
Order from OTS or SLA $1.10 62-13473

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 337-340.

DESCRIPTORS: *Veterinary medicine, Scientific organizations, Scientific reports, History.

This is a history of the institute from 1912 when it was created. Past and present research in veterinary medicine are described with publications cited for each project.

Krastin, N. I.
FAR EAST SCIENTIFIC-RESEARCH VETERINARY INSTITUTE (Dal'nevostochnyi Nauchno-Issledovatel'skii Veterinarnyi Institut). 27 Oct 61, 6p. Trans. V-1739.
Order from OTS or SLA $1.10 62-13471

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 23, p. 321-324.

DESCRIPTORS: *Veterinary medicine, *Scientific organizations, Scientific reports, History.

This history outlines the development and scope of the institute from its foundation in 1935. The major scientific and practical problems solved by the institutes and present fields of research are summarized.

Roy, Henri L., Le
SUCCESSFUL ANIMAL BREEDING; A QUESTION OF EVALUATING THE BREEDING VALUE AND INFLUENCING THE ENVIRONMENT (Erfolgreiche Tierzucht Eine Frage der Zuchtbeurteilung und der Umweltgestaltung). [1960] [17]p.
Order from SLA $1.60 60-18653

Trans. of mono. Schweiz. Lexikon für die Landwirtschaft, n.p., n.d., p. 1-8.

DESCRIPTORS: *Reproduction, *Genetics, Fertility, Food, Ecology, Agriculture, *Animals.

Rys, Rajmund and Lazarska, Barbara.
INVESTIGATIONS INTO THE METABOLISM OF COPPER AND MOLYBDENUM (Badania nad Metabolizmem Miedzi i Molibdenu) tr. by M. Radziwill. 1961 [6]p. 7 refs. PL-480 Agr
Order from OTS $0.50 60-21418

Trans. of Roczniki Nauk Rolniczych. Seria B: [Zootechnicza] (Poland) 1955, v. 70, no. 1, p. 1-5.

DESCRIPTORS: *Metabolism, *Copper, *Molybdenum, Cattle, Food, Blood chemistry.

The addition of copper or molybdenum to the feed of cows caused a temporary rise in blood copper. It is concluded, on the basis of these observations, that there exists a certain machanism which controls copper absorption from the alimentary tract. This mechanism is characterized by a certain inertia and its complete mobilization occurs only after a certain time. Probably the organism must adapt itself to the intake of larger amounts of copper. The milk yield and fat production for the period experimental, pre-experimental and post-experimental periods showed no significant differences. The fertility of the cows also underwent no important changes.

Shil'nikov, V. I.
VIABILITY OF THE FOOT-AND-MOUTH DISEASE VIRUS IN THE WATER, SOIL AND ON THE PLANT COVERING IN THE PRETUNDRA ZONE (MARSHY PLAINS) OF THE KOMI ASSR (Sokhranyaemost' Virusa Yashchura v Vode, Pochve i na Rastitel'nom Pokrove v Pritundrovoi Zone Komi ASSR). 5 Sep 61, 14p. Trans. V-1728.
Order from OTS or SLA $1.60 61-28448

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1959, v. 22, p. 112-119.

DESCRIPTORS: *Foot-and-mouth disease, *Veterinary medicine, Bacteria, Viruses, Diseases, Cattle.

Sandy and marshy soils, running and stagnant water, and lichen bushes were inoculated with the foot-and-mouth disease (FMD) virus. A 10% suspension in phosphate buffer solution prepared from the primary lesions of infected guinea pigs was used for the contamination process. Saturated silk fibers were buried in the soils. The lichin bushes were immersed in the suspension and then placed in the soils. The water had the infected material suspended in the reservoirs used to supply water for the studies. Samples of water, the lichens and the silk fibers were removed at intervals and used to prepare a solution which was injected into guinea pigs. The virus succumbed much sooner in July when the temperature was the highest and the daylight was longest. Viability increased as temperatures lowered and daylight decreased. In July the virus lost its viability in sandy ground within 48 hours, on lichen stems in 5 days and marshy ground in 9 days The virus produced infection from running water up to 11 days and from stagnant water up to the 15th day. FMD virus in July survived from 2 to 15 days, and in August from 22 to 30 days. Materials infected in the second half of September still produced disease in guinea pigs after 30 days.

Sosipatrov, G. V.
DIAGNOSIS OF ECHINOCHASMOSIS, A NEW SWINE DISEASE (Diagnostika Novogo Zabolevaniya Svineiekhinokhasmoza). 23 Aug 61, 9p. (3 figs. omitted). Trans. V-1727.
Order from OTS or SLA $1.10 61-28446

Trans. of Veterinariya (USSR) 1961, v. 38, no. 5, p. 36-39.

DESCRIPTORS: Trematodes, *Swine, Pathology.

A mass disease of swine was ascertained in the Kharabalinsk raion, Astrakhan oblast', in 1959, which was accompanied by considerable losses. It was caused by minute trematodes, which proved to belong to the species Echinochasmus perfoliatus. Subsequently the distribution of echinochasmosis was ascertained also in certain other raions of the Astrakhan oblast'. It was determined that the most convenient and effective methods of diagnosis of echinochasmosis in swine are the methods of the native smear and of successive washing with an exposure to settling for 8 minutes. The most characteristic pathologoanatomical changes are noted in the section of small intestines, where a catarrhal and catarrhal-hemorrhagic inflammation occurs under the effect of helminths. The most characteristic clinical symptoms in the case of echinochasmosis of swine are: diarrhea, continuing during the course of the entire period of disease, vomiting or foamy flow from the mouth, emaciation, retardation in growth and development, bone-shaped deformation of the spine, increase in pulse and respiratory rates, periodic increase of body temperature, periodic compulsions, enlargement of lymph nodes.

Ternovoi, V. I.
CONTRIBUTIONS TO THE ECOLOGY OF WOHLFARTIA MAGNIFICA SCHIN IN THE VIRGIN SOIL REGION OF KALMYK ASSR (Materialy po Ekologii Vol'fartovoi Mukhi (Wohlfartia Magnifica Schin) v Tselinnom Raione Kalmytskoi A.S.S.R.) tr. by W. Hall. [1961] [16]p. (foreign text included) 5 refs. [CSIRO] Trans. no. 5492.
Order from OTS or SLA $1.60 61-28771

Trans. of Zoologicheskii Zhurnal (USSR) 1960, v. 39, no. 8, p. 1174-1178.

DESCRIPTORS: *Diptera, *Ecology, *Sheep, Veterinary medicine, USSR.

The ecology of Wohlfartia flies was studied in June and July of 1958 and in July of 1959 in the "Leninskii" State Farm in the Kalmyts region of the A.S.S.R., situated on the eastern slope of the "Evgeninskii" elevation. The Wohlfartia flies attack the sheep at water reservoirs, on pasture grounds and in the shelters. They fly singly and cause great disturbance among the sheep. The latter perceive the approach of the sound they make. While this is happening, for 2 or 3 seconds the animals listen, bending their heads down or to one side, then begin to stamp violently with their feet, shake their heads and swish their tails and, finally, run over to another place or lie down. The fly, frightened away by the sheep, flies off to one side for

five to ten seconds, alights on the grass, then approaches another sheep which is standing nearby or grazing, and which also becomes disturbed. Sheep which are greatly exhausted cease in the end to react to the appearance of flies. At this time the fly alights on the edge of the wound, for a few seconds sucks the exudation from the wound, and deposits larvae at the edge of the wound. (Extracted)

Werda, Kazimiera.
THE INFLUENCE OF IRON ON THE BLOOD PATTERN IN NORMAL HENS AND THOSE ARTIFICIALLY INFECTED WITH FOWL CHOLERA (Wplyw Zelaza na Obraz Krwi Kur Zdrowych Oraz Zakazonych Sztucznie Cholera Drobiu) tr. by W. Kulerski. 1961, [30]p. 24 refs. PL-480 Agr.
Order from OTS $0.50 60-21223

Trans. of [Uniwersytet Marii Curie-Sklodowskiej]. Annales. Sec[tio] D: [Medicina] 1955, v. 10, no. 9, p. 239-266.

DESCRIPTORS: *Chickens, Blood, *Iron, *Hemoglobin, *Erythrocytes, *Leukocytes, *Cholera, Diseases, Pathology.

Normal hens fed with ferrum lacticum in 0.01-g daily doses underwent an increased red cell count of 70,000 to 220,000/cu mm and haemoglobinometry by 4° to 7° Sahl. The increase became manifest between the seventh and ninth days after the commencement of supplement feeding and continued with some variation throughout the period of observation (10 to 45 days). The white cell pattern showed no change. Chemical tests for iron in the droppings were negative. Tests on the effects of iron on cholera were inconclusive, although the average survival time of hens fed with the iron supplement was longer than that of the control hens, which seems to indicate some positive influence of the iron supplement.

Yuskovec, M. K.
CATTLE TUBERCULOSIS AND ITS CONTROL IN THE SOVIET UNION. 7 July 61 [9]p. JPRS: 8525.
Order from OTS or SLA $1.10 61-27063

Trans. of Veterinarstvi (Czechoslovakia) 1958, v. 8, no. 3, p. 93-95.

DESCRIPTORS: *Tuberculosis, *Cattle, Tuberculin, Infections, Public health, *Veterinary medicine.

Plant Cultivation

FOREST SITE CLASSIFICATION (Klasyfikacja Siedlisk Lesnych) tr. by Z. Kapuscinska. Papers submitted to the Conference of the Polish Forestry Science Society in 1958. 1961 [25]p. PL-480 Agr.
Order from OTS $0.50 60-21395

Trans. of Sylwan (Poland) 1959, v. 103, no. 5, p. 7-19, 21-31, 33-38.

DESCRIPTORS: *Forestry, *Trees, Classification, Maps, Preparation.

Contents:
Principles of forest site classification adopted by the state forest service and applied in silviculture, by L. Mroczkiewicz
Classification system of forest sites, by T. Trampler
Field work technique applied in elaborating site maps, by K. Makosa.

Bachteev, F. Ch.
NIKOLAJ IVANOVIC VAVILOV (11/26/1887-8/2/1942) TO HIS 70TH BIRTHDAY (Nikolaj Ivanovic Vavilov (26.11.1887-2.8.1942) zu seinem 70. Geburtstag). [1961] [23]p. 3 refs.
Order from SLA $2.60 61-20428

Trans. of der Zuchter (Germany) 1958, v. 28, p. 161-166.

DESCRIPTORS: *Scientific personnel, *Agriculture, *Plants, *Genetics.

Dominik, Tadeusz.
OBSERVATIONS AND CONSIDERATIONS ON THE DUTCH ELM DISEASE CAUSED BY GRAPHIUM ULMI SCHWARZ (Spostrezezenia i Rozwazania nad Holenderska Ohoroba Wiazow Powodowana Przez Graphium Ulmi Schwarz) tr. by S. Lukomski. 1961 [6]p. PL-480 Agr.
Order from OTS $0.50 60-21485

Trans. of [Roczniki Nauk Rolniczych] (Poland) 1937, v. 38, [no. 1] p. 134-140.

DESCRIPTORS: *Trees, *Diseases, Plants, *Fungi, Mutations, Fungus infections.

Dorofeev, V. F.
THE ROLE OF ADVENTITIOUS ROOTS IN THE RESISTANCE OF WHEAT TO LODGING (Rol' Pridatochnykh Kornei v Ustoichivosti Pshenitsy Protiv Poleganiya). July 61 [3]p. RTS 1881.
Order from OTS or SLA $1.10 61-27299

Trans. of Selektsiya i Semenovodstvo (USSR) 1959 [v. 24] no. 4, p. 70-72.

DESCRIPTORS: *Wheat, Cereals, Plants, Growth, Agriculture.

Morphological and anatomical analyses were made of wheats resistant to lodging, and suffering badly from lodging, at tube (sic: stem?) formation, ear formation, and the waxy stage of grain ripeness. Results showed that the resistance of wheat to lodging at the root depends on the degree of root system development, the number of adventitious roots and, chiefly, their size. In plants of wheat varieties resistant to lodging, these roots, which are of comparatively large diameter, form in the upper part of the tillering node, but they often appear from the first stem node. In varieties which lodge no development of adventitious roots was observed

Kolyasev, F. E.
MOVEMENT OF SOIL WATER AND SOME MEANS OF CONTROLLING IT (Podvizhnost' Vody v Pochve: Nekotorye Puti Ee Regulirovaniya). 1961, 24p. 62 refs. PL-480 Agr.
Order from OTS $0.50 60-51002

Trans. of mono. Vopr[osy] Agronomika Fiz[iki] (Problems of Agricultural Physics) n. p., 1957, p. 11-29.

DESCRIPTORS: *Soils, Moisture, *Irrigation systems.

Kozicka-Nowakowa, E.
SELF-POLLINATION IN RED CLOVER (TRIFOLIUM PRATENSE L.) (Samozapylenie Koniczyny Czerwonej) tr. by S. Dzieduszycki. 1961 [16]p. 8 refs. PL-480 Agr.
Order from OTS $0.50 60-21417

Trans. of Hodowla Roslin, Aklimatyzacja i Nassiennictwo (Poland) 1958, v. 2, no. 1, p. 1-15.

DESCRIPTORS: *Pollen, *Fertility, *Plants, Seeds, *Reproduction, Growth.

Studies at the Research-Breeding Station of the Institute of Plant Breeding and Acclimatization in Grodkowice, showed that by self-pollination of red clover it is possible to easily obtain plants or even lines which are self-fertile. Seeds obtained by self-pollination do not differ from those obtained by pollination by insects. The number and percentage of flowers pollinated per one flower head varies considerably in self- and cross-pollination methods. Seeds obtained by means of inbreeding did not germinate because of the high percentage of hard seeds (about 60 percent). (Author)

Minibaev, R. G.
PHYTOCOENOTIC LAWS GOVERNING WEEDS OF CULTIVATED FIELDS (Fitotsenoticheskie Zakonomernosti Sorno-polevoi Rastitel'nosti) tr. by M. Slade. [1961] [13]p. (foreign text included) 13 refs. [CSIRO] Trans. no. 5453.
Order from OTS or SLA $1.60 61-28641

Trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 1, p. 135-139.

DESCRIPTORS: *Plants; Agriculture, *Pest control, *Herbicides, Ecology, Soils, Rye, Wheat, Moisture, Fertility, Propagation, Drainage.

This article is based on data gathered between 1955 and 1958 in the Upper-Uslonsk, Nurlatsk, Kama-Ust'insk, and High-Mountain districts of the Tatar Republic. Three ecological-topographic series and 208 test plots are described. Observations show that the weed infestation is least on light-grey weakly podzolic soils under winter rye and summer wheat. Here weeds lasting only few years predominate. The number of weed species is greatest and the infestation most severe in depressed portions of the relief in fields under summer crops, where the soils are wettest and most fertile. On the grey eroded soils the annual and biennial weeds are at a minimum, whereas the perennial weeds are represented by a large number of shoots. In plots where the crop stands are dense and the abundance of cultivated plants (by weight) is great, there are few weeds, and these are in a depressed state. When the stand of cultivated plants is sparse, the abundance of weeds increases.

Oswiecimski, Adam.
SOIL CONDITIONS AND THE PLANNED MEASURES AGAINST SOIL EROSION IN THE MIDDLE SUDETEN (Warunki Terenowe i Projektowana Walka z Erozja Gleb w Sudetach Srodkowych) tr. by J. Humnicka. 1961 [6]p. PL-480 Agr.
Order from OTS $0.50 60-21547

Trans. of Gospodarka Wodna (Poland) 1955, v. 15, no. 6, p. 267-268.

DESCRIPTORS: Mountains, *Soils, *Erosion, Countermeasures, Physical properties.

Pasternak, P. S.
THE EROSION OF FOREST SOILS IN VARIOUS TYPES OF FORESTS IN THE CARPATHIAN MOUNTAIN ZONE IN CONNECTION WITH LUMBERING (Eroziya Lesnykh Pochv v Raznykh Tipakh Lesa Gornoi Zony Karpat v Suyazi s Rubkami Glavnogo Po'zovaniya) 1961, 7p. PL-480 Agr.
Order from OTS $0.50 60-21906

Trans. of mono. Vsesoyuznoe Soveshchanie po Bor'be s Eroziei Pochv (All-Union Conference on the Prevention of Soil Erosion) 1955. [Trudy, 1957] v. 6, p. 577-586.

DESCRIPTORS: Mountains, Forestry, Trees, *Soils, *Erosion.

On mountain slopes 35° steep, after complete cutting, the erosion processes develop mildly and do not cause much damage. This is true for spruce-fir, for spruce-fir-beech, as well as for beech woods in stands of medium density, providing natural regrowth and the grass cover are satisfactory. Under the same conditions, but in the absence of natural regrowth and grass cover after complete cutting, the erosion processes develop considerably and result in deterioration in the conditions of forest growth. On slopes greater than 35°, under similar conditions of complete cutting the erosion processes develop strongly. The result is that the conditions of forest growth deteriorate to those of thin, mixed beech woods and spruce woods. Complete clear cutting in mixed spruce woods with unmethodical log-hauling on a slope of above 20° causes a drastic deterioration in forest growth. On "perched soil", it causes a complete destruction of the soil layer and the conversion of such areas into stone scatterings. (Author)

Prasolov, L. I. and Antipov-Karataev, I. N.
THE CHESTNUT SOILS (Kashtanovye Pochvy). 1961, 39p. 27 refs. PL-480 Agr.
Order from OTS $0.50 60-21844

Trans. of mono. Pochvy SSSR, v. 1 [Moscow] 1939, p. 261-298.

DESCRIPTORS: *Soils, Physical properties, Climatic factors, Moisture, Salinity, Fertility, Chemical properties.

Rode, A. A.
THE SOIL FORMING PROCESS AND SOIL EVOLUTION, tr. by J. S. Joffe. 1961, 100p. 127 refs. PL-480 Agr.
Order from OTS $1.00 60-21835

Trans. of mono. Pochvoobrazovatel'nyi Protsess i Evolyutsiya Pochv, Moscow, 1947 [147p.].

DESCRIPTORS: *Soils, History, Climatic factors, Precipitation, Physical properties, Classification, Growth, Plants, Animals, Gravity.

The soil forming process is a part of the cycle of matter and energy which occurs between the atmospheric layer at the ground, the surface layers of the lithosphere, ground waters, and living organisms. It is namely that part of it represented by the combination of phenomena of transformation and translocation of matter and energy taking place in the surface layers of the crust of weathering. Among these layers the phenomena most characteristic and real are those of the interaction (exchange of matter and energy) between the layers that form the soil and the living organisms (chiefly vegetation). The soil forming process is by nature cyclic. It is subordinate to the rhythmic fluctuations of solar ray energy reaching the earth's surface. The most important cycles are daily and annual. Also of significance are the irregular periodic fluctuations associated with changes in weather conditions and probably also such protracted cycles as the 11.5 year cycle associated with sun spots, the 35 year Brickner cycle, etc. To the five factors of soil formation established by Dokuchaev (parent material, topography, climate, plant and animal world, and time) three more have to be added: the earth's gravity, water (surface, soil, and ground), and the economic activity of man. (Extracted)

Rubtsov, I. A.
PRESENT SITUATION AND PROBLEMS OF INVESTIGATION AND EMPLOYMENT OF ENTOMOPHAGES FOR BIOLOGICAL PEST CONTROL IN THE USSR AND ABROAD. [1961] [5]p.
Order from OTS or SLA $1.10 61-23032

Trans. from theses of reports presented at the Conference on Problems of the Biological Method of Pest Control, Leningrad/Moscow, 1957

DESCRIPTORS: *Insects, *Pest control, Economics, Agriculture.

Volkov, S. M., Zimin, L. S. and others.
PESTS AND DISEASES OF AGRICULTURAL CROPS: SELECTED ILLUSTRATED DESCRIPTIONS. 1961, 75p. PL-480 Agr.
Order from OTS $0.75 60-51061

Trans. of mono. Al'bom Vreditelei i Boleznei Sel'skokhozyaistvennykh Kul'tur Nechernozemnoi Polosy Evropeiskoi Chasti SSSR (Album of Pests and Diseases of Agricultural Crops in the Non-Chernozem Area of the European Part of the USSR) Moscow/Leningrad, 1955 [p. 68-69, 72-79, 88-89, 94-95, 98-99, 104-105, 114-115, 134-135, 144-147, 156-159, 190-191, 198-199, 238-239, 250-253, 278-283, 288-289, 300-301, 348-349, 360-367, 396-399, 416-417, 434-439, 448-449].

DESCRIPTORS: *Plants, *Diseases, *Insects, *Cereals, Beetles, Diptera, Fleas, Moths, Mites, *Fungi, Mildew, Rusts, Molds, *Vegetables, *Fruits, *Trees.

Contents:
Cereal-damaging carabus beetles; Phyllotreta vittula, Redt (striped grain flea-bettle); Grain stem flea-bettles; Lema melanopus, L. (leaf beetle); Grain bettles; Parastichtis basilinea, Schiff ("grain caterpillar"); Cereal flies; Phorbia genitalis, Schnabl (spring fly); Pea and bean weevils; Amaurosoma flavipes, Fall ("timothy" or "spike fly"); Cassida nebulosa, L. (tortoise beetle); "Flax fleas"; Phalonia epilinana, L. ("flax moth" or "flax leaf roller moth"); Vegetable garden Cruciferae bugs; Aclypea opaca, L. (opaque carrion beetle); Tetranychus urticae, Koch (red spider mite); Ceuthorryhnchus jakovlevi, Schultz (onion weevil); Syanthedon myopaeforme, Bork (apple clearwing); Rynchites auratus, Scop ("cherry weevil"); Coenorrhynchus pauxillus, Germ ("snout beetle" or "leaf weevil"); Glycophagus destructor, Schrk (common hairy mite); Tyrophagus noxius, A. Zachv ("elongate mites"); Mites: Ptinus fur, L. (ptinid beetle); Useful insects; Rust and powdery mildew of pea; Club fungus on clover; Anthracnose and Pseudopeziza leaf spot of clover, Downy mildew and Powdery mildew of clover; Hemp diseases; Broomrapes on sunflower and vegetable crops; Onion diseases: Plum "pockets" and "browning" (drying-off) of cherry leaves; Pear and apple rust; Plum leaf blight and stone fruit spot; Gooseberry and currant rust.

ASTRONOMY

Beer, Arthur, ed.
VISTAS IN ASTRONOMY, VOL. 4: [SELECTED PARTS]. Nov 61, 208p.
Order from PP $12.00

DESCRIPTORS: *Astronomy, *Satellite vehicle research, *Satellite vehicles, Motion, Photography.

Contents:
An eighth century meridian line, by A. Beer and others
Artificial satellites, by Harrie S. W. Massey
Dynamical effects in the motion of the earth sputniks, by L. I. Sedov
Photographic observations of artificial earth satellites, by A. G. Massevitch and A. M. Lozinskii.

Beer, Arthur, ed.
VISTAS IN ASTRONOMY, VOL. 5, Nov 61, 248p.
Order from PP $12.50

DESCRIPTORS: *Astronomy, Stars, Interstellar matter, Absorption, Nebulae, Magnetic fields, Fraunhofer lines, Binary stars, Comets, Novae.

Contents:
The values of nutations and of the period of the variation of latitude, by R. O. Vincente
Distribution of stars and interstellar absorption, by G. Alter
Galactic orbits of stars, by L. Perek
The magnetic fields in planetary nebulae, by G. A. Gurzadian
The profiles of weak Fraunhofer lines, by G. I. Thompson
On the evaluation of close binary stars, by F. B. Wood
Ancient and mediaeval observations of comets and novae in Chinese sources.

Kuz'min, A.and Salomonovich, A.
RADIO ASTRONOMICAL OBSERVATIONS OF THE PLANET VENUS (Radioastronomicheskie Nablyudeniya Venery) tr. by A. Pingell. 29 Sep 61 [9]p. 1 ref.
N R L Trans. no. 866.
Order from OTS or SLA $1.10 61-28712

Trans. of Radio [Moscow] (USSR) 1961, no. 7, p. 6-7.

DESCRIPTORS: *Venus, *Planets, *Radio astronomy, Thermionic emission, Rotation, Earth, *Temperature, Illumination, Radio waves, Clouds, Water vapor, Oxygen.

Observations of thermal radio emission from Venus with a 22 m radio telescope of the Physics Institute of the Academy of Sciences USSR indicated that as Venus rotates toward the earth with its illuminated surface, its temperature increases. This indicates that it is very hot on Venus in the daytime. On the illuminated side of the planet, the temperature of its surface probably reaches several hundreds of degrees Celsius while the temperature of the atmosphere on the unlighted side of Venus is about 0° C. The absorption of 8 mm radio waves in the Venus atmosphere indicates that in the layer below the clouds there is water vapor or oxygen or both. Probably, the surface of Venus is not a continuous ocean, as was conjectured by some astronomers.

Astrophysics

Barbier, Daniel.
INTERPRETATION OF THE NOCTURNAL LUMINESCENCE OF THE RED OXYGEN LINE (Interpretation de la Luminescence Nocturne de la Raie Rouge de l'Oxygene). [1961] [5]p. 7 refs.
Order from SLA $1.10 62-10141

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1957 [v. 244] 8 Apr, p. 2077-2080 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Ionosphere, *Night sky, Luminescence, *Oxygen, Intensity, *Sky brightness.

With the aid of an empiric formula it was possible to account approximately for the intensity of the red line on the basis of ionospheric data during the first part of the night. A supplementary phenomenon, perhaps the arrival of arctic air, complicated the interpretation of observations during the second part of the night. (Author)

Vasil'eva, G. Ya.
CERTAIN RESULTS OF STUDYING TREMORS FROM STAR TRACES. 28 Aug 61 [13]p. 6 refs.
MCL 1202/1+2. AD-264 514
Order from OTS or SLA $1.60 61-28504

Unedited rough draft trans. of mono. Trudy Soveshchaniya po Issledovaniyu Mertsaniya Zvezd, 1958, Moscow/Leningrad, 1959, p. 165-173.

DESCRIPTORS: *Stars, Detection, Computers, *Astronomical data, Astronomical observations, Astronomy.

Autocorrelation functions were plotted for 13 traces of stars observed under various conditions, in attempting to ascertain the effect of the azimuth, the zenith distance, and the season on the energy distribution in relation to the frequency in the random component, and in the case of detection of a periodic component, on the energy and frequency related to this component. The results corroborate the assumption of the presence of a periodic nonrandom component in the tremor process. The period of the nonrandom component for stars observed in the direction of the steppe was, on the average, 0.6 sec greater than for stars in the direction of the sea. For all the March stars the period was, on the average, twice as great as the period obtained for the star observed in July. The energy for stars located over the sea is about 4 times greater than for those located over the steppe (according to the data for one night). The energy of the nonrandom component amounts to 10 to 20% of the total energy contained in the oscillatory process, and this relationship depends neither on the azimuth nor on z (according to the data for one night).

Vesenkov, V. G. and Krinov, E. L.
NEWS OF TUNGUSKA METEORITE. [1961] [9]p.
Order from OTS or SLA $1.10 62-10178

Trans. of Akademiya Nauk SSSR. Vestnik, 1960 [v. 30] no. 12, p. 32-35
Other translations are available from OTS or SLA $1.10 as 61-14986 [1961] 7p. and from OTS $1.60 as AD-264 066. STL-TR-61-5110-21, Apr 61, 9p.

DESCRIPTORS: *Comets, *Explosions, Explosion damage, Flight paths, Atmosphere, Penetration, Earth, USSR, *Meteorites.

Aerial photographs showed that a powerful explosion took place in at least 3 separate centers. Shock waves blasted the forest for tens of km, travelled around the earth and caused ground tremors which were recorded by the Irkutsk observatory. Recordings of pressure waves made in Potsdam.

BEHAVIORAL SCIENCES

Bleikher, V.
MEMORY AND ATTENTION. 6 Oct 61 [7]p.
JPRS: 10371
Order from OTS or SLA $1.10 61-28851

Trans. of Znannya ta Pratsya (USSR) 1961, no. 2, p. 18-19.

DESCRIPTORS: *Memory, *Attention, Training, Learning, Brain, Reaction (Psychology), Cybernetics.

A very important factor in training the memory is interest in what is being learned. The more interesting the subject, the easier it is to memorize it. As a rule, people are acted upon simultaneously by an endless number of different stimuli. For that reason psychic activity requires that the brain react only to those stimuli which are the most important at a given moment. The direction and concentration of psychic activity is also called attention. It is an inseparable characteristic of organized psychic activity, without which the brain cells would react chaotically to any stimulus. Fortunately, there is never a total lack of attention. But poor attention gives us many inconveniences. At times it causes fatigue of the body and its nervous system. In such cases we need only rest. Much more frequently the lack of attention can be explained as the failure of persons to train their attention. In such cases we must develop the capacity for attention. Inattentive type persons are given concrete assignments and required to carry them out. Training the memory and attention is possible for anyone. And don't look for someone to take special charge of the development in you. This is a job you can all cope with, all you need is the desire and eagerness. (Author)

Human Engineering

Pronin, G. A.
A COMPARATIVE HYGIENIC EVALUATION OF STANDARDS FOR HOUSING CONSTRUCTION TERRITORY SLOPES (Sravnitel'naya Gigienicheskaya Otsenka Norm Uklonov Territorii Zhiloi Zastroiki). 12 Oct 61 [13]p. 6 refs. JPRS: 10535.
Order from OTS or SLA $1.60 61-28865

Trans. of Gigiena i Sanitariya (USSR) 1961 [v. 26] no. 7, p. 22-28.

DESCRIPTORS: Standards, *Housing, Construction, Physiology, *Human engineering, Civil engineering, Fatigue (Physiology)

Experiments showed that the ascending of slopes of 0.5 to 4.0% is a comparatively mild load on the body, excluding considerable physiological changes and unpleasant sensations. Ascending a 6% slope represents work of moderate severity, at which time definite physiological reactions and unpleasant sensations begin to appear. Ascending 8 and 10% slopes is heavy work and gives pronounced uncomfortable sensations. On the basis of data of experimental investigations it may be noted that the maximum permissible, hygienically substantiated slope of city construction is a slope of no more than 6%.

Skornyakov, L. A.
CONCERNING ONE CLASS OF AUTOMATA (NERVOUS SYSTEMS). 25 Sep 61 [28]p. 4 refs. JPRS: 10205.
Order from OTS or SLA $2.60 61-28515

Trans. of #Problemy Kibernetiki (USSR) 1960, no. 4, p. 23-36.

Portions of this report will not reproduce well.

DESCRIPTORS: *Nervous system, Data processing systems, Mathematical analysis, *Cybernetics

Consideration is given to (1) labyrinths and partly ordered sets, (2) the nervous system (considered as the union of a labyrinth, a set, and a system of operations), (3) representation of events in nervous systems, (4) canonical nervous systems, and (5) the criterion of equivalence.

Personnel and Training

ELECTION OF ACADEMICIAN M. V. KELDYSH AS PRESIDENT OF THE ACADEMY OF SCIENCES USSR. Chemistry: USSR no. 16. 3 Oct 61 [17]p. JPRS: 10389.
Order from OTS or SLA $1.60 61-28626

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, [v. 31] no. 6, p. 3-13.

DESCRIPTORS: Scientific organizations, *Scientific personnel, Personnel.

SCIENTIFIC PERSONALITIES AND ORGANIZATIONS IN HUNGARY. 11 Feb 60, 43p. JPRS: L-2035-D.
Order from OTS or SLA $4.60 60-31049

Consists of complete translations of selected biographic-type articles.

DESCRIPTORS: *Scientific personnel, Personnel, *Scientific organizations, Hungary.

SOVIET FIGURES IN THE MEDICAL SCIENCES. 21 Sep 61 [21]p. JPRS: 10243.
Order from OTS or SLA $2.60 61-28610

Trans. from Meditsinskii Rabotnik (USSR) 1961 [v. 24] no. 33(1989), p. 4 and no. 38(1994) p. 4.

DESCRIPTORS: *Medical research, *Universities, *Scientific organizations, History, *Medical personnel.

The candidates whose names have been submitted for Corresponding Member status in the Academy of

Medical Sciences USSR are listed by scientific institutions, social organizations, groups of scientific workers, and individuals in accordance with the advisory issued by the Academy Presidium dated 17 March 1961.

Kostenko, M. P., Saukov, A. A. and others.
SCIENTIFIC TIES ABROAD [AND] ACADEMY OF SCIENCES NEWS ITEMS. Chemistry: USSR no. 18. 3 Oct 61 [11]p. JPRS: 10391.
Order from OTS or SLA $1.60 61-28593

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 6, p. 81-85.

DESCRIPTORS: *Scientific organizations, *Scientific personnel, Personnel.

Kubiczek, Mieczyslaw:
A BIOGRAPHY OF TADEUSZ TEMPKA. 2 Sep 60, 10p. JPRS: 3778.
Order from OTS or SLA $1.10 60-31732

Trans. of Nauka Polska, 1959, v. 7, no. 2, p. 214-224.

DESCRIPTORS: *Medical personnel, Personnel, Poland, Medical personnel.

BIOLOGICAL SCIENCES

SOVIET SCIENCE'S PLANS FOR INTENSIFIED EXPANSION IN VARIOUS BIOLOGICAL AREAS.
18 Dec 61, 28p. JPRS: 11551.
Order from OTS $0.75 62-11085

Trans. of Akademiya Nauk SSSR. Izvestiya. [Seriya Biologicheskaya] 1961 [v. 26] no. 5, p. 657-663 and 828-830.

DESCRIPTORS: *Scientific organizations, Biochemistry, Biophysics, Microbiology, *Agriculture, Medicine, Biology, *Biological laboratories.

Contents:
Address by N. M. Sisakyan, Academic Secretary, Department of Biological Sciences, Academy of Sciences USSR, 4 Apr 61 at a general session of the department, concerning work planned by the department (abridged report)
Plenary session, Department of Biological Sciences USSR, 17 May 61.

Brailo, N. P.
ULTRASOUND: A POWERFUL POTENTIAL TOOL OF BIOPHYSICS AND MEDICINE (Ul'trazvuk: Moshchnoe Potentsial'noe Sredstvo Biofiziki i Meditsiny).
18 Sep 61 [12]p. 4 refs. JPRS: 10164.
Order from OTS or SLA $1.60 61-28586

Trans. of Novosti Meditsinskoi Tekhniki (USSR) 1959, no. 3, p. 77-85.

DESCRIPTORS: *Ultrasonics, *Biophysics, *Medical research, *Diagnosis, Medicine.

Grashchenkov, N. I.
THE TASKS FACING CLINICAL NEUROLOGY DURING THE SIXTH FIVE-YEAR PLAN. [1961] 2p.
Order from OTS or SLA $1.10 62-15303

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1956 [v. 56] no. 10, p. 765.

DESCRIPTORS: *Neurology, Medicine, Biochemistry.

Anatomy and Physiology

THE PROBLEM OF COMPENSATORY ADAPTATIONS [SELECTED ARTICLES]. 13 Oct 61 [36]p. 8 refs. JPRS: 10439.
Order from OTS or SLA $3.60 61-28867

Trans. of mono. Problema Kompensatornykh Prisposoblenii, Moscow, 1960, p. 166-187.

DESCRIPTORS: Physiology, *High altitude, Aviation medicine, *Respiration, Air, Barometric pressure, Low pressure research, Reaction (Psychology), *Oxygen consumption, *Blood circulation, Man, Shock, Electrocardiography, Electroencephalography, Anoxia, *Survival.

Contents:
The adaptation possibilities for survival under conditions of considerable air rarefications in O_2 respiration under increased pressure, by M. I. Vakar
Certain adaptation reactions of the organism under reduced barometric pressure, by D. I. Ivanov
Compensatory reactions of man under the effect of shock accelerations, by P. K. Isakov
Altitude resistance as an adaptation to hypoxemia, by V. B. Malkin.

Derviz, G. V. and Stepanenko, A. G.
DISTRIBUTION, IN THE BLOOD AND ORGANS, AND EXCRETION FROM THE ORGANISM OF POLYGLUCINE INTRODUCED INTO THE BLOOD STREAM. 11 Oct 61 [12]p. 8 refs. JPRS: 10441.
Order from OTS or SLA $1.60 61-28907

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 4, p. 467-474.

DESCRIPTORS: *Blood, *Body fluids, *Excretion, *Glucosides, *Sulfonates, *Plasma substitutes, Substitutes, Polymers.

Polyglucine, injected in the blood of guinea pigs appeared within a short time in nearly all tissues and organs of the body. It could not be elicited in the brain,

skin, and bones. The very high polyglucine content of the blood (as high as 1250 mg%) during the first few minutes after administration decreased rapidly afterwards; it equaled only 200 mg% toward the end of the first 24 hours and disappeared completely from the blood stream. In the hepatic tissue polyglucine is retained longer than in all other tissues (about 100 mg% on the average, or about 4% of the administered total) and is excreted very slowly. It is still present in the liver on the 10th day (1.3 mg%). In renal tissue a high polyglucine concentration (250 mg%) is detected during the first hour following administration; its excretion is somewhat retarded. In the tissues of the muscles, lungs and spleen the polyglucine content is quite high during the first hours following administration, then it decreases rapidly, and on the 2nd-3rd day no polyglucine can be detected in these tissues. Polyglucine is excreted from a guinea pig organism with the urine and feces during the first four days. The excretion rate is approximately as follows: during the 1st hour -- 30%, within five hours -- about 50%, toward the end of 24 hours -- 75%, and toward the end of 48 hours -- 84% of the total administered amount.

Isichenko, N. A. and Al'khimenyuk, V. P.
GAS EXCHANGE IN RATS OF DIFFERENT AGES UNDER THE INFLUENCE OF OVERCOOLING (Gazoobmen u Krys Raznogo Vozrasta pod Vliyaniem Pereokhlazhdeniya). 3 Nov 61 [6]p. 4 refs.
JPRS: 10840.
Order from OTS or SLA $1.10 62-13316

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1961, v. 5, no. 4, p. 47-49.

DESCRIPTORS: *Hypothermia, Age factors, Oxygen, Carbon dioxide, Metabolism, Cooling, Gases, Rats.

The experiments were performed on 134 rats: adults, weighing 150-230 grams (age one-two years); old rats, weighing 300-400 grams (age over two years); and sexually immature rats, weighing 30-47 grams (age from 22 to 32 days). The animals were subjected to two kinds of chilling: a slight one with a reduction of the rectal temperature by 2-3° and a strong one with reduction of the rectal temperature by 10-15°. In adult rats during the period of repair both after a weakened strong degree of chilling an increase in the O_2 uptake and CO_2 excretion are observed. In old and sexually immature rats during the period of repair and following chilling of a slight degree the oxygen uptake and CO_2 excretion do not increase. In the case of pronounced hypothermia in the old rats the O_2 uptake in the period of repair increases; however, this is to a lesser degree than in adults. In the old and sexually immature rats with a marked degree of overcooling during the period of repair the decrease in gas exchange is maintained, which is not observed in adult rats with the same degree of hypothermia.

Ludwig.
THE MAGNITUDE OF A SEEN OBJECT. [1961] [9]p.
Order from SLA $1.10 61-14812

Trans. of mono. Physiologie des Menschen (Human Physiology) v. 1, n.p., n.d., p. 250-252.

DESCRIPTORS: *Visual perception, Optical images, Sizing, Eye, Vision, Retina, *Physiology.

The magnitude of an object, that is, its apparent dimension in height and breadth, is estimated according to the dimension which the image of the object has on the retina, and according to the contraction of the muscles of the dioptric apparatus and those of the recti interni bulbi at the time when the light impression of the image is received. All other things being equal, our impression of the size of an object grows, as it seems, with the expansion of its image on the retina or of its visual angle. (Author)

Pleshchitser, A. Ya.
BIOLOGICAL ROLE OF MAGNESIUM (Biologicheskaya Rol' Magniya). [1961] [39]p. 131 refs.
[NIH]-54.
Order from OTS or SLA $3.60 62-15133

Trans. of Uspekhi Sovremennoi Biologii (USSR) 1955, v. 40, no. 1(4), p. 52-67.

DESCRIPTORS: *Magnesium, Soil, Plants, Chlorophylls, *Calcium, *Blood chemistry, *Nervous system, *Metabolism, Metabolism inhibitors, Cholines, Cells (Biology), Nerves.

Biochemistry

ACTA BIOCHIMICA POLONICA, 1961, VOL. 8, NO. 3, P. 279-385. 1961, 1v. PL-480 HEW.
Order from OTS $1.25 60-21560-3

DESCRIPTORS: *Biochemistry, *Proteins, *Nuclei (Biology), *Adenosine phosphates, Serum-albumin, *Muscles, Nucleotides, *Nucleoproteins, Seeds, Plants, Phosphorus, Isotopes, *Moths, *Phosphorylases, Furan derivatives, *Liver, *Nucleic acids, Regeneration, *Bacteria, Sulfur, *Ribonuclease, Polymers, *Bromides, Phosphates, *Pyrimidine derivatives, Carbamyl radicals, Wheat, Metabolism.

Contents:
Studies on protein synthesis in the cell nuclei, by P. Szafranski and others
Binding of ATP by human serum albumin in solution, by W. Drabikowski
Some properties of complexes of muscle proteins with the nucleotides present in the muscle, by Hanna Strzelecka-Golaszewska
Changes in proteins of yellow lupin (Lupinus Luteus L.) during germination, by Bronislawa Morawiecka
Incorporation of ^{32}P into the phosphorus compounds of the wax moth larvae (Galleria Mellonella) by Paulina Wlodawer
Thymidine phosphorylase and other enzymes in regenerating rat liver, by Celina Janion and D. Shugar
Nucleolytic enzymes of Thiobacillus Thioparus. Purification and properties of ribonuclease, by Wl. Ostrowski and Z. Walczak
Synthesis and physico-chemical and enzymatic properties of 5-bromo derivatives of uridine phosphates and their polymers, by W. Szer and D. Shugar
Metabolism of ^{14}C-L-Carbamylaspartic acid to

pyrimidine derivatives in excised wheat blades, by J. Buchowicz and others.

Includes summaries in Polish and Russian

ACTA BIOCHIMICA POLONICA, 1961, VOL. 8, NO. 4, P. [389]-471 AND INDEX VOL. 8, NOS. 1-4. 1961, 1v. PL-480 HEW
Order from OTS $1.25 60-21560-4

DESCRIPTORS: *Biochemistry, Peptides, Proteins, Acids, Electrophoresis, Streptomycins, Labeled substances, Bacteria, *Radiation effects, Toxicity, *Cytochemistry, *Nucleic acids, Tissues (Biology) Nucleoproteins, Enzymes, *Coenzymes, Reduction, *Dehydrogenases, *Phospholipids, Radiochemistry.

Contents:
The peptide structure of proteic acids, by Maria Sarnecka-Keller
Inactivation of the streptomycin resistance markers of three species of bacteria by ionizing radiation, by R. Pakula and others
Gross histochemical localization of tissues nuclease enzymes, by Halina Sierakowska and others
Studies on coenzyme Q reduction, by Ludmila Szarkowska and J. Heller
The quantitative studies on rat tissues lysolecithin, by R. Niemiro and J. Przyjemski
Radiation chemistry of nucleic acids and their derivatives, by Daniela Barszcz and D. Shugar.

Includes summaries in Polish and Russian

Drobnik [Ya.].
STUDY OF THE BIOLOGICAL TRANSFORMATION OF ORGANIC SUBSTANCES IN THE SOIL (Izuchenie Biologicheskikh Prevrashchenii Organicheskikh Veshchestv v Pochve). Jan 62 [13]p. 34 refs. RTS 2012.
Order from OTS or SLA $1.60 62-13926

Trans. of Pochvovedenie (USSR) 1957, no. 12, p. 62-71

DESCRIPTORS: *Organic materials, *Soils, Decomposition, *Nitrogen, *Biosynthesis, Respiration, *Oxygen compounds, Microbiology, Micro-organisms.

The processes of transformation of substances which form the basis of life of the soil and which are expressed by continuous decomposition of some compounds and the synthesis of others, are closely associated with the activity of micro-organisms.

However, determination of the quantity and composition of the soil microflora is far from adequate for assessing those functions which are performed by different groups of micro-organisms under given conditions, or the nature of biochemical processes taking place in the soil. Data obtained by determining the activity of soil enzymes cannot serve as a criterion of total biological activity and fertility of the soil.

Mardashev, S. R.
AMINO ACID AMIDES, THEIR METABOLISM AND PHYSIOLOGICAL ROLE IN THE ANIMAL ORGANISM (Amidy Aminokislot, Ikh Obmen i Fiziologicheskaya Rol'v Zhivotnom Organizme). [1961] [56]p. 96 refs. [NIH]-51.
Order from OTS or SLA $5.60 62-15135

Trans. from Uspekhi Sovremennoi Biologii (USSR) 1955, v. 40, no. 1(4).

DESCRIPTORS: *Amino acids, *Amides, *Metabolism, Animals, Physiology, *Aspartic acid, *Glutamine, Biosynthesis, Tissues (Biology), Peptides

Botany

Anan'ev, A. R.
NEW FOSSIL PLANTS FROM THE LOWER DEVONIAN DEPOSITS OF THE VILLAGE OF TORGASHINO, SOUTH-EASTERN ZONE OF WESTERN SIBERIA. [1961] 27p. (5 drawings 3 plates omitted) 12 refs.
Order from OTS or SLA $2.60 61-19567

Trans. of Bot[anicheskii] Zhurnal (USSR) 1957, v. 42, no. 5, p. 691-702.

DESCRIPTORS: *Plants, *Paleoecology, Siberia, Geology.

Data are presented on a number of species, which may be used to determine the age of Torgashino fossil flora. These species are as follows: Jenisseiphyton lebedevii Ananiev, J. rudnevae (Peresvetov) Ananiev, Angarolaminariopsis zinovae nov. gen. et sp., Zosterophyllum myretonianum Penh., Protobarinophyton obrutschevii (Ananiev) sp., Pectinophyton bipectinatum nov. sp., Psilophyton goldschmidtii Halle, cf. Psilophyton princeps Dawson, Psilophytines rectissimum Höeg., Loganiella cf. canadensis Stolley, Protohyenia janovii nov. gen. et sp., cf. Protopteridium minutum Halle, cf. Drepanophycus spinaeformis Goepp. (Extract)

Malyavkina, V. S.
THE SPORES AND POLLEN OF THE LOWER CRETACEOUS OF THE EASTERN GOBI DEPRESSION. [1961] [29]p.
Order from OTS or SLA $2.60 61-15960

Trans. of [Vsesoyuznyi Neftyanoi Nauchno-Issledovatel'skii Geologo-Razvedochnyi Institut. Trudy] (USSR) 1958, no. 119, p. 3-19.

DESCRIPTORS: *Spores, *Pollen, Geology, Mongolia, Plants, Climatic factors.

In order to study the spore-pollen remains from the Cretaceous deposits in the Mongolian Peoples' Republic use was made of a collection of core samples from 32 drill holes (about 700 samples) which were collected by the geologists during a number of years. The geologic research covered the territory south of

Ulan-Bator in the area of Mt. Sayn-Shanda within a radius of about 100 km to the north and to the southeast from this point. The spore-pollen complexes from the Goteriv and Barrem deposits are distinguished by an abundance of the specific composition and a comparative lack of diversity in the generic composition. The species of the genera Lygodium, Cybotium, Polypodium, Asplenium, Abietipites, and Stachycarpus predominate. The rare vains with a large number of specimens of spores and pollen are ingrained among the heavy strata of the sediments with a vegetable ligneous detritus, with the spores of fungi and algae.

Slizik, L. N.
DISTRIBUTION OF CONIUM MACULATUM L. IN THE CRIMEA (O Rasprostranenii Conium Maculatum L. v Krymu) tr. by M. Slade. [1961] [7]p. (foreign text included) 16 refs. [CSIRO] Trans. 5402.
Order from OTS or SLA $1.10 61-28218

Trans. of Botanicheskii Zhurnal (USSR) 1960, v. 45, no. 10, p. 1538-1540.

DESCRIPTORS: *Plants, *Poisons, Toxicity.

General Biology

Gershenzon, S. M., Kok, I. P. and others.
AN ATTEMPT TO INDUCE GENETIC VARIATIONS IN ANIMALS BY MEANS OF DESOXYRIBONUCLEIC ACID AND DESOXYRIBONUCLEOPROTEINS. 9 Oct 61 [8]p. 11 refs. JPRS: 10322.
Order from OTS or SLA $1.10 61-28739

Trans. of Zhurnal Obshchei Biologii (USSR) 1960, v. 21, no. 5, p. 387-389.

DESCRIPTORS: *Genetics, *Mutations, *Nucleic acids, *Nucleoproteins, Proteins.

Reznik, P. A.
MORPHOLOGY OF THE NYMPHS OF DERMACENTOR KOCH (K Izucheniyu Nepolovozrelykh Stadii Kleshchei Semeistva Ixodidae. Soobshchenie IV Morfologiya Nimf Kleshchei Roda Dermacentor Koch) tr. by M. Slade. Pt. 4 of Study of the Immature Stages of Ixodid Ticks. [1961] [22]p. (foreign text included) 13 refs. [CSIRO] Trans. no. 5348.
Order from OTS or SLA $2.60 61-28648

Trans. of Zoologicheskii Zhurnal (USSR) 1959, v. 38, no. 12, p. 1797-1805.

DESCRIPTORS: *Ticks, *Anatomy, *Insects.

A detailed description of the nymph of Dermacentor marginatus is presented. Peculiarities of morphological structure of the nymphs of D. pictus, D. daghestanicus, D. nuttalli, D. silvarum and D. pavlovskyi are given briefly. There are also shown the changes which the ticks undergo when transitting from the larval stage to that of the nymph. (Author)

Medical Specialties and Equipment

Novinskii, G., Vorob'ev, L., and Vorob'eva, I.
DIAGNOSIS BY APPARATUS (Prybory Stavyat Diagnoz). 20 July 61 [12]p. JPRS: 9688.
Order from OTS or SLA $1.60 61-27234

Trans. of Izobretel' i Ratsionalizator (USSR) 1960, no. 8 [p. 12-14].

DESCRIPTORS: *Diagnosis, Machines, *Cybernetics, Data processing systems, Therapy, Electronic equipment, Acoustics.

Brief nontechnical descriptions are presented of (1) a cybernetic machine with which medical diagnoses can be made, and (2) two apparatuses (an electronic apparatus and an acoustic apparatus) for locating the proper points for acapuncture treatment.

Sokolowska-Dekowa, Antonina.
A BIOGRAPHY OF MIECZYSLAW MICHALOWICZ. 2 Sep 60, 6p. JPRS: 3779.
Order from OTS or SLA $1.10 60-31733

Trans. of Nauka Polska, 1959, v. 7, no. 2, p. 225-231.

DESCRIPTORS: *Medical personnel, *Pediatrics, Scientific reports.

Microbiology

Alimova, E. K., Bolgova, G. D. and others.
SOME PROPERTIES OF BRUCELLA LIPIDS. [1961] [7]p. 1 ref.
Order from OTS or SLA $1.10 61-23653

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1958, v. 30, no. 4, p. 506-512.

DESCRIPTORS: *Brucella, *Lipids, *Microbiology, *Spectrographic analysis, Biochemistry, *Organic solvents, *Evaporation, Ethanols, Ethers, Benzenes, Chloroform, Esters, Cholesteral, Phosphorus, Arabinose, Ribose, Ribulose, Xylose.

Cells of 3-day and 30-day cultures of Br. suis, Br. abortus, and Br. Melitensis were used. The free lipids were extracted by ethyl alcohol, ether, acetone, anhydrous ethyl alcohol, benzene, and chloroform. The remaining residue of the bacterial mass was soaked in a mixture of chloroform and ether for 8 days at 18°. After filtration, the residue was further treated with an ether and chloroform mixture for 80 minutes at boiling temperature. These two mixtures were evaporated to obtain the fixed lipids. The extracted products from the 3 and 30 day cultures of each strain were mixed. These mixtures were then studied to establish the constant properties of the lipids of each bacterial strain. These a tabulation showing color, consistency, a

esterification index, phosphorus and nitrogen contents, and results of tests for presence of cholesterol and pentose. Spectrophotometric curves of absorption for the various extractions from each strain are also included.

Shlyakov, E. N., Shroit, I. G. and others
THE PRIMARY FORM OF INTESTINAL ANTHRAX (Pervichnaya Kishechnaya Forma Sibirskoi Yazvy). 19 Sep 61, 5p. Trans. V-1733.
Order from OTS or SLA $1.10 61-28453

Trans. of Zdravookhranenie (USSR) 1961, no. 1, p. 58-59.

DESCRIPTORS: *Anthrax, *Intestinal bacteria, Soils, Contamination.

Two examples are reported of anthrax contamination from the soil.

Sokolov, I. I.
THE OCCURRENCE OF FUSION IN CELL NUCLEI (O Lavleniyakh Sliyaniya Kletochnykh Lader). [1961] 20p. (4 figs. omitted) 19 refs. [NIH]-17.
Order from OTS or SLA $1.60 62-15149

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1955, v. 32, no. 4, p. 54-62.

DESCRIPTORS: *Cells (Biology), *Nuclei (Biology) Regeneration, Reproduction, Genetics, Mutations, *Mitosis, Spermatogenesis, *Biochemical genetics.

A review of the literature and findings of the author's research lead to the conclusion that giant sex cells formed at any stage of spermatogenesis have lost the ability to undergo further normal development and division, and remain for a long time at the stage at which they were formed, while the other cells continue to develop in the normal manner. A slowing down or stopping of development, and sometimes fusions, may affect several cells at some later stage. The phenomenon of nuclear fusion may be regarded as a defence reaction of the cell, reducing the intensity of the processes of interaction between nucleus and cytoplasm when unfavourable conditions arise. The phenomenon of nuclear fusion may occur more widely than has been believed. Many cases described and interpreted as amitosis, may be examples of nuclear fusion.

Pathology

ACHIEVEMENTS IN CHINESE TRADITIONAL MEDICAL TREATMENT OF SCHISTOSOMIASIS AND MALARIA. 16 Aug 61 [27]p. 23 refs. JPRS: 4880.
Order from OTS or SLA $2.60 61-27923

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsieh K'o Hsueh Ch'eng Chiu Lun Wen Chi [A Collection of Papers on the Medical Sciences in Commemoration of the Tenth Anniversary of the Founding of the People's Republic of China] v. 1, Peiping, Dec 59, p. 319-330.

DESCRIPTORS: *Schistosomiasis, *Malaria, Therapy, Medicine.

Ten different mixtures used as remedies for early infestation of schistosomiasis are described. These are combinations of herbs and animal products used by the native Chinese for centuries. They range from betel nut, flowers of sulphur, juice from the warts of toads, crows gaul to pumpkin seed. Following treatment with the ten prescriptions the ova disappeared from the patients' stools. In the later stages of disease native herb remedies, moxibustion and acupuncture therapy were of value in preparing patients for antimony treatment. The history and native treatment of malaria in China is reviewed. Most of the native drugs used contained an infusion of orixa japonica. Studies of this with a betel nut compound showed that 24 cases out of 26 had no plasmodia present after 2 doses. A secret formula, called malaria powder, is simple, economical with quick effects. Acupuncture-moxibustion was effective in treating malaria. Only 9 persons out of 2,267 given Ch'ang-Chiao pills came down with malaria. The contents of these pills is not given in article. Two of the 3 drugs found to be effective in treating and preventing malaria contain orixa japonica.

ACUPUNCTURE IN THE TREATMENT OF DEAF-MUTISM. 29 Sep 61 [19]p. 27 refs. JPRS: 10338.
Order from OTS or SLA $1.60 61-28751

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chiu Lun Wen Chi [Collected Essays on the Achievements of Medical Science in Celebration of the Tenth Founding Anniversary of the Nation] v. 1, Peiping, 1959, p. 381-388.

DESCRIPTORS: *Deafness, *Therapy, Statistical data, China.

Since 1952 several Chinese clinics have used acupuncture-moxibustion in treating deaf-mutism. This treatment is based upon the Chinese traditional theory of channels and veins (Ching-lo Hsueh-lo). This theory states that there are many connected channels (Ching-mai) and veins (lo-mai) distributed throughout the body. Three main channels enter the ear and emerge in front of the ear, behind the ear, and at the upper corner. These channel endings are major sites of treatments. Two techniques are used: a straight puncture, in which the needle is introduced and removed directly, and the twisting puncture, in which the needles are twisted up and down. The latter technique is repeated every 5 or 10 minutes. Treatment is discontinued when numbness and swelling is produced. The Shanghai Traditional Medical College 11th People's Hospital reported 84% effectiveness of treatment in 301 cases; the Kaingsu Traditional Medical School Clinic reported 82% for 374 cases. The lowest percentage of effectiveness for this treatment was 62.5%. Results with a superficial stab were generally not as effective as with a deeper stab. Best results were obtained on patients with a residual hearing ability. (See also 61-28609, 61-31507)

GLOSSOSCOPY IN CHINESE TRADITIONAL MEDICINE. 8 Aug 61 [11]p. 7 refs. JPRS: 4851.
Order from OTS or SLA $1.60 61-27942

Trans. of mono. Ch'ing Chu Chien Kuo Shih Chou Nien I Hsüeh K'o Hsüeh Ch'eng Chui Lun Wen Chi [A Collection of Papers on Medical Sciences in Commemoration of the Tenth Anniversary of the Founding of the People's Republic of China] v. 1, Peiping, Dec 59, p. 315-319.

DESCRIPTORS: *Medicine, *China, Diagnosis, *Medical examination.

MEDICAL NEWS IN THE ESTONIAN SSR: SELECTED ARTICLES. 11 Oct 61 [21]p. JPRS: 10457.
Order from OTS or SLA $2.60 61-28951

Trans. of Zdravookhranenie Sovetskoi Estonii (USSR) 1960, no. 5, p. 66-68 and 70-75.

DESCRIPTORS: *Conferences, *Medical personnel, Students *Scientific reports, Surgery, Skin, Diseases, Venereal diseases, *Otorhinolaryngology, Intestine, Infections, *Public health.

Contents:
Graduates of the medical faculty of Tartu State University in 1960, by I. Maaroos
Prize-papers of students of the medical faculty of Tartu State University in 1960, by M. Sikk
Republican Scientific-Practical Conference of Dermato-Venerologists, by R. Uuetoa
Republican Conference of Surgeons of the Estonian SSR (no. 7) by I. Freiberg
Conference of Otorhinolaryngologists of the Estonian SSR, by V. Sargava
Republican conference on Intestinal Infections, by H. Pihl
At the Collegium of the Ministry of Health of the Estonian SSR, by A. Sarap.

MEDICAL RESEARCH IN THE THIRD FIVE-YEAR PLAN IN CZECHOSLOVAKIA. 19 Feb 60 [11]p. JPRS: 3010.
Order from OTS or SLA $1.60 60-31060

Trans. of Casopis Lekaru Ceskych (Czechoslovakia) 1959, v. 99, no. 1, p. 1-4.

DESCRIPTORS: *Medical research, *Public health, Scientific research, Czechoslovakia.

Akhmerov, U.
PHILOSOPHY AND MEDICINE (Filosofia i Meditsina). 31 Aug 61 [7]p. JPRS: 10017.
Order from OTS or SLA $1.10 61-28265

Trans. from Izvestiya (USSR) 1961, 28 June, p. 4.

DESCRIPTORS: *Medicine, *Philosophy

Hippocrates wrote that the application of philosophy to medicine enriched both philosophy and medicine. And the history of natural science, in particular biology, physiology and medicine confirms the great significance of theory in the development of science. Many philosophers were expert doctors, and the best doctors in all times have been philosophers. One has only to recall Avicenna, Galen and Lamertrie. All reactionary theories in foreign medicine possess a distinct class bias: the reasons for the ailments are found in the peculiarities of the individual organism, by this means they cover up the severe social conditions of the capitalist world. The only scientific philosophy, Marxism-Leninism, gives doctors a powerful mental weapon in the struggle for the health of mankind. But we still use this weapon poorly. It should be possible to organize the work of clinical departments of universities in such a way that the general philosophical knowledge received by the student becomes stronger, broader, more profound and concrete. (Extracted)

Fedorov, N. S.
ERRORS IN THE DIAGNOSIS OF CANCER OF THE LOWER LIP. [1961] 2p.
Order from OTS or SLA $1.10 62-15304

Trans. of Stomatologiya (USSR) 1955, no. 6, p. 32.

DESCRIPTORS: *Diagnosis, *Neoplasms, *Mouth, Errors, Tumors, *Cancer.

The nature of the error usually consists in clinical diagnosis of non-neoplastic conditions as cancer. It is only in rare cases that cancer is mistaken for a non-neoplastic condition.

Dobrowolska, H.
SEROLOGICAL EXAMINATION OF SELECTED GROUPS OF PEOPLE IN POLAND TOWARD PREVENTION OF POLIOMYELITIS. 22 Mar 61 [30]p. JPRS: 7684.
Order from OTS or SLA $2.60 61-19425

Trans. of Postepy Higieny i Medcyny Doswiadczalnej (Poland) 1960, v. 14, no. 4, p. 381-403.

DESCRIPTORS: *Serum, Antitoxins, *Poliomyelitis, Antibodies, *Immunization, Preventative medicine.

Khundanov, L. E., Shkurko, E. D., and Devyatova, A. P.
GAMMA GLOBULIN IN EXPERIMENTAL ANTHRAX INFECTION: AUTOREPORT (Gamma-Globulin pri Eksperimental'noi Sibireyazvennoi Infektsii: Avtoreferat). 6 Sep 61, 3p. Trans. V-1730.
Order from OTS or SLA $1.10 61-28450

Trans. of Veterinarya (USSR) 1961, v. 38, no. 6, p. 45-46.

DESCRIPTORS: *Anthrax, *Antibodies, Animals, Pathology.

Anti-anthrax sera from 2 series were treated at low temperatures with ethyl alcohol. These concentrated and purified sera contained 5 or 6 times less albumin than the original sera. White mice were injected with the purified sera both before and after inoculation with

anthrax. Control animals were similarly inoculated with untreated sera. The purified and concentrated serum was more effective in both the prevention and the treatment of anthrax. This effectiveness is in direct proportion to the percentage of gamma globulin in the serum.

Kolabskii, N. A.
DEVELOPMENT OF HAEMOSPORIDIA OF THE PIROPLASMIDAE FAMILY IN THE ORGANISM OF VERTEBRATES (O Razvitii Gemosporidii sem. Piroplasmidae v Organizme Pozvonochnykh Zhivotnykh) tr. by M. Slade. [1961] [33]p. [CSIRO] Trans. no. 5072.
Order from OTS or SLA $3.60 61-23977

Trans. of Veterinarnyi Institut, Leningrad. Sbornik Rabot (USSR) 1954, v. 14, p. 9-24.

DESCRIPTORS: *Parasites, *Ticks, *Animals, *Growth, *Erythrocytes, Parasitic infections, Diseases, *Fevers, Insects, Parasitology, Protozoa, *Plasmodium

Thorough observations indicate that Piroplasmidae haemosporidia multiplying in the organism of vertebrate have two developmental stages, viz., one in the endothelial cells of vessels and another in the erythrocytes. The saliva of the tick introduces into the organism of a vertebrate animal a sporozoite which penetrates into endothelial cells, where it develops into a schizont. The schizont grows, the nucleus divides and schizonts of different sizes and shapes with blue protoplasm and a large number of ruby-coloured nuclei are found. Such schizonts fall apart and the endothelial cells are destroyed in the process. The derivitives of the schizonts can again infest a cell or enter the blood stream. In the blood stream they possibly assume a rounded shape, and are subsequently phagocyted by white and red blood cells. In the white blood cells they perish, but in the red blood cells the parasite adapts itself to the medium and develops into an annular, amoeboid, and finally pear-shaped form. In the erythrocytes the parasite abandons multiple fission and begins to multiply by budding. As a result a second stage is formed in the erythrocytes. In ticks, which are the earlier hosts, the haemosporidia develop both asexually and sexually, but in the vertebrate organism they multiply only asexually.

Korol', S. A. and Umanskii, Yu. A.
COURSE OF TETANUS TOXICATION UNDER THE EFFECT OF DIFFERENT TYPES OF IONIZING RADIATION ON GROUNDS OF CHANGES IN THE REACTIVENESS (Techenie Stolbnyachnoi Intoksikatsii pri Deistvii Razlichnykh Vidov Ioniziruyushchikh Izluchenii na Fone Izmennoi Reaktivnosti). 9 June 61, 5p. Trans. V-1707.
Order from OTS or SLA $1.10 61-28130

Trans. of mono. Nauchno-Issledovatel'skii Institut Epidemiologii i Mikrobiologii Kiev. Materialy Nauchnykh Konferentsii, Kiev, 1959, p. 233-235.

DESCRIPTORS: *Infections, Clostridium tetani, *Radiation effects, *X-rays, *Beta particles, *Gamma rays, Toxicity.

The effects of antireticular cytotoxic serum (ACS), X-rays, gamma rays and beta rays on the course of tetanus infections in mice were studied. The procedures and doses used are not given. The viability of infected mice treated with X-rays was shorter than after the application of gamma and beta rays. Infection after irradiation produced the shortest life span. ACS in stimulating doses prolonged the life of the experimental mice. Inhibiting doses of ACS decreased viability and reduced the LD_{50} (a dose lethal to 50% of test objects). Simultaneous infection and application of X-rays or gamma rays of radioactive cobalt combined with ACS increased the toxic reactions. Beta and gamma rays with stimulating doses of ACS improved the course of tetanic poisoning. When infections were induced after irradiation, the toxic effects of stimulating and blocking doses of ACS were decreased. Inhibiting doses of ACS increased the severity of toxic effects. Inhibiting and stimulating doses of ACS with gamma radiation aggravated the toxic effects; beta radiation decreased the toxic effects.

Kramchaninov, N. F.
HISTORY OF THE STUDY OF YELLOW FEVER IN RUSSIA (K Istorii Izucheniya Zheltoi Likhoradki v Rossii). Review of unpublished work "Procedural Discussion of the Crimean National Disease", by Ya. T. Sturdzy. 5 Dec 61 [8]p. 6 refs. JPRS: 11397.
Order from OTS or SLA $1.10 62-13642

Trans. of Sovetskoe Zdravookhranenie (USSR) 1960, v. 19, no. 12, p. 59-62.

DESCRIPTORS: *Yellow fever, Fevers, History, USSR

Morgunov, I. N.
INFLUENCE OF THE ALLERGIC REACTIVENESS UPON THE COURSE OF BERING'S [SIC] PHENOMENON (Znachenie Reaktivnosti Organizma Zhivotnykh v Summatsii Tokicheskikh Razdrazhenii. Soobshchenie 1. Vliyanie Allergicheskoi Reaktivnosti na Techenie Fenomena Beringa). Rept. 1 of Significance of the Reactiveness of the Animal Organism in the Summation of Toxic Stimulations. 20 Apr 61, 4p. Trans. V-1677.
Order from OTS or SLA $1.10 61-19764

Trans. of mono. Nauchno-Issledovatel'skii Institut Epidemiologii i Mikrobiologii, Kiev. Materialy Nauchnykh Konferentsii, Kiev, 1959, p. 174-175.

DESCRIPTORS: *Allergy, *Toxicity, *Diphtheria toxoid, Antigens, Immunology, *Anaphylaxis, Sensitization, *Inflammation.

Guinea pigs that had been sensitized by injections of horse serum were given injections of 1/50 of the minimum lethal dose of diphtherial toxin. For the study of local reactions 5 injections were given; 11 injections were given to study the general reactions. It was established that the sensitivity to a foreign antigen did not change the animals' general reactions to injections of the toxin. Both the general and local reactions were reduced when a focus of acute inflammation (Arthus phenomenon) was present. The site of the injection of toxin in relation to the focus of inflammation had no effect on the reaction to the toxin.

When violent anaphylactic shock occurred in the sensitized animals at the beginning of the injections of toxin, there was no change in their reactions to the toxin as compared to those of the control animals. (See also 61-19763)

Plojhar, Josef.
TASKS OF THE CZECHOSLOVAK PUBLIC HEALTH SERVICE IN THE FIVE-YEAR PLAN. 20 July 60, 16p. 1 ref. JPRS: 3560.
Order from OTS or SLA $1.60 60-31409

Trans. of Ceskoslovenske Zdravotnictvi, 1960, v. 8, no. 1, p. 1-10.

DESCRIPTORS: *Public health, *Industrial medicine, Women, Children, *Medical research, Czechoslovakia.

Pogrebnik, L. P.
UKRAINIAN SCIENTIFIC CONFERENCE OF PARASITOLOGISTS (NO. 3) (Konferentsiya Parazitologive). 23 Aug 61 [7]p. JPRS: 9875.
Order from OTS or SLA $1.10 61-27961

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1961, no. 2, p. 256-258.

DESCRIPTORS: *Parasitology, *Scientific research, Medicine, Veterinary medicine.

Polyakov, D. K.
MORPHOLOGICAL CHANGES IN THE SKIN OF CATTLE UNDER THE EFFECT OF DEMODEX BOVIS AS A CHARACTERISTIC OF THE MANY PROCESSES IN THE BIOLOGY OF THE PARASITE, tr. by P. A. Kazakov. [1961] 3p. [CSIRO Trans.]5409.
Order from OTS or SLA $1.10 61-27445

Trans. of Vsesoyuznyi N[auchno]-Issledovatel'skii] Institut Veterinarnoi Sanitarii i Ektoparazitologii]. Trudy (USSR) 1959, v. 14, p. 34-35.

DESCRIPTORS: *Mites, *Cattle, *Skin, Parasites, Growth.

The period of life of the colony of D. bovis (community of mites) is subject to considerable changes in time which can be traced by systematic clinical examinations of animals. Colonies of D. bovis detected clinically, i. e. morphological changes in the skin occurring in the form of nodules, may finish their development within a month or a longer period. The maximum parasitic activity of D. bovis and the intensity of development of their colonies occurs during spring and summer months. (Author)

Roskin, G. I. and Yulius, A. A.
THE COLLOIDAL-LABILE STATE OF RIBONUCLEIC ACID IN GROWING, INTENSIVELY FUNCTIONING AND MALIGNANT CELLS. [1961] 6p. [NIH]-56.
Order from OTS or SLA $1.10 62-15131

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1955, v. 32, no. 4, p. 19-22.

DESCRIPTORS: *Nucleic acids, Colloids, *Cytochemistry, Cytochromes, *Neoplasms, Tissues (Biology), Mammary glands, Pregnancy, *Cells (Biology), Cancer

To determine whether RNA in differentiated cells is in as labile a state as in embryonic ones the mammary glands of white mice were studied. Observations showed that RNA, or some other ribonucleoprotein complex, is present in the nonfunctioning mammary gland in a stable colloidal state and is not precipitated as granules by basic dyes. In the mammary glands of pregnant mice, the RNA is in a less stable state but the lability is greater. The acid colloid was less stable in mammary glands showing malignant changes (adenocarcinoma). The colloid formed numerous granules of different sizes. In some cases the granules occurred round the edges of the cytoplasm, or formed clumps in certain areas. Embryonic and immature cells fall in one group type B, and malignant cells which are rapidly growing and capable of dividing in a second type A, group. Malignant cells no longer growing, taken from tumour areas showing no mitoses, do not give granules on supravital staining with neutral red. The RNA in rapidly growing immature or malignant cells, (type A), is in a labile state, where the RNA is relatively stable and not precipitated by strains. Type B cells can vary in relative content in tumours, sometimes even predominating. The RNA in the nucleoli of the most varied cell types is in a stable state, which is unrelated to the state of the cytoplasmic RNA.

Pharmacology and Toxicology

Andreev, S. V., Vadkovskaya, Yu. D., and Glebova, M. S.
EFFECT OF RENIN PREPARATIONS ON THE BLOOD PRESSURE IN EXPERIMENTS (Vliyanie Preparatov Renina na Krovyanoe Davlenie v Eksperimente). 12 Oct 61 [24]p. 29 refs. NIH no. 10-7-61.
Order from OTS or SLA $2.60 62-13292

Trans. of Akad[emiya] Med[itsinskikh] Nauk SSSR. Trudy, 1952 [v. 20] p. 56-75.
Another trans. is available from LC or SLA mi$3.00, ph$6.30 as 60-10106 [1959] [31]p.

DESCRIPTORS: *Hypertensin, *Hypertension, Vasomotor drugs, Enzymes, *Adrenal cortical extract, *Blood pressure, Drugs, Brain, Physiology.

The changes in the blood pressure of dogs were observed after injections of different renin preparations prepared from the adrenal cortex of different animals. Crucial (sic) tests were done with morphine-hexobarbital narcosis. The dosages in these tests were 0.5 to 1 ml/kg of weight. In the chronic (sic) tests which were done without narcosis on two dogs kept permanently, the dosage ranged from 0.5 mm to 5 ml. Over 300 experiments were carried out. In the crucial tests the renin caused a rise of the maximum blood pressure by 30 to 180 mm and a rise of the minimum by 10 to 120 mm. In about half of the chronic tests, the increase in the systolic pressure was greater than the increase in diastolic pressure. The maximum elevation of blood pressure underwent 100-mm fluctuations.

The duration of the elevation of blood pressure did not depend upon the maximum increase nor the speed of its drop during the first hour. Multiple injections produced a permanent elevation of blood pressure. Purified renin preparations did not influence respiration, and did not produce changes in the blood or urine. The functional state of the dog's organism and that of its brain determined the outcome of the reaction evoked by renin preparations.

Capek, R., Hava, M., and Vanecek, J.
PHARMACOLOGICAL SYMPOSIUM. 21 Mar 60, 19p. JPRS: 3092.
Order from OTS or SLA $1.60 60-31088

Trans. of Ceskoslovenska Fysiologie, 1959, v. 8, no. 6, p. 574-582.

DESCRIPTORS: *Pharmacology, *Scientific reports, *Drugs, Nerves, *Nervous system, Stimulation.

Authors and titles of papers are given that were presented at the symposium held on May 12-14, 1958 in Liblice.

Morgunov, I. N. and Khatuntsev, V. V.
SUMMATION OF TOXIC STIMULATION WITH TOXINS OF BAC. (CLOSTRIDIUM) OEDEMATIENS (Summatsiya Toksicheskikh Razdrazhenii Toksinom Bac. Oedematiens). 20 Apr 61, 3p. Trans. V-1680.
Order from OTS or SLA $1.10 61-19767

Trans. of mono. Nauchno-Issledovatel'skii Institut Epidemiologii i Mikrobiologii, Kiev. Materialy Nauchnykh Konferentsii, Kiev, 1959, p. 181-182.

DESCRIPTORS: *Microbiology, *Bacterial toxins, Toxicity, *Acquired immunity, Immunization, Mice, Gas gangrene, *Clostridium oedematiens.

Injections of 1/5 minimum lethal dose (MLD) of the toxin of Bac. (Cl.) oedematiens were given daily to 20 mice for 4 days. Another group of 22 mice were injected with 1/10 MLD for 12 days. In the group receiving 1/5 MLD, 3 mice died during the first 3 days; 14 died between the fourth and sixth day; and 3 survived. In the group receiving 1/10 MLD, 4 died within 3 to 5 dyas, and 2 died between the fifteenth and the twentieth day. Antitoxic immunity was observed in 5 of the mice that received 12 injections of the 1/10 MLD. These mice were given 1 MLD a few days after the last injection of 1/10 MLD. All 5 died within the first 24 hours. In the control group of 5 mice that received just 1 injection of 1 MLD, 1 mouse died on the first day and 4 died after 48 hours. This indicated that it is possible to produce Behring's phenomenon with the toxins of Bac. (Cl.) oedematiens, and that this differentiates it from other gas-gangrene organisms. (See also 61-19763)

Sokolova, L. N., Kichenko, V. I. and others.
DIOSPONIN, A NEW DRUG FOR THE TREATMENT OF ATHEROSCLEROSIS PATIENTS. 13 Dec 61 [9]p. 11 refs. JPRS: 11508.
Order from OTS or SLA $1.10 62-13717

Trans. of Meditsinskaya Promyshlennost' SSSR, 1961, v. 15, no. 7, p. 43-45.

DESCRIPTORS: *Vasomotor drugs, *Arteriosclerosis, Pharmacology, Therapy, Cholesterol, Drugs.

An investigation was made of the saponins of Dioscorea caucasia in cholesterol atherosclerosis. The plant is a diclinous, herbaceous perennial of the Dioscoreacea family. It grows wild in the western part of Transcaucasia and can be cultivated in the Moscow region.) The crushed air-dried rhizomes of Dioscorea caucasia were extracted with 80-proof ethyl or methyl alcohol. From the filtered extract alcohol was stripped off until heavy foaming started. After the residue had cooled, the precipitate (water-insoluble saponins) was filtered off and discarded, and the mother liquor was concentrated in a dish on a hot-water bath to about 0.1 of the initial volume of the alcohol extract. The concentrated mother liquor was dissolved in methyl alcohol and precipitated with ether. The precipitate, which contains the water-insoluble saponins, was vacuum dried and ground to a powder. The resulting product (named diosponin) was an amorphous hygroscopic light-cream colored powder. Clinical investigations on over 200 patients with severe brain atherosclerosis (length of illness from 2 to 15 years) showed that when diosponin is orally administered in 0.02- to 0.2-g doses, two times a day for 10 days with 4- to 5-day intervals between the 10-day treatment cycles, there is a drop (down to normal) in the cholesterol content of the blood, an improvement in the psycho-emotional sphere, the memory, and the general condition, and a normalization of neurodynamic disorders. The Pharmacological Committee authorized the preparation for general use in the treatment of atherosclerosis patients.

Stepanov, A. V. and Shtal, V. K.
MEDICINAL COMPOUNDS: GLUCOSIDES OF NITROGEN CONTAINING SUBSTANCES. I. THE GLUCOSIDE OF UREA. [1961] 4p. 13 refs.
Order from OTS or SLA $1.10 61-20732

Trans. of Farmatsiya (USSR) 1940, no. 11, p. 16-19.

DESCRIPTORS: *Urea, Urea derivatives, *Glucosides, Synthesis, Diuretics.

The glucoside of urea can be easily obtained in water-alcohol medium in the presence of a small quantity of HCl. In this way well-formed crystals are obtained of a high degree of purity. The reaction can also be carried out in acidified 95% ethyl alcohol, however, in view of the poor solubility of glucose in alcohol this method has no advantages. (Author)

Radiobiology

Chebotar'ov, E. Yu.
CHANGES IN PROTEIN FRACTIONS OF THE BLOOD SERUM OF DOGS IN ACUTE RADIATION SICKNESS (Zmina Bilkobykh Fraktsii Syrovatky Krovi u Sobak pri Gostrii Promenevii Khvorobi). 26 June 61 [15]p. 16 refs. JPRS: 9421.
Order from OTS or SLA $1.60 61-27067

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 1, p. 83-91.

DESCRIPTORS: *Radiation effects, Dogs, *Blood, *Serum, Proteins, *Blood proteins, Albumins, Liver, Pathology, *Reticulo-endothelial system.

Changes in the composition of the protein fractions of the serum in dogs during acute radiation sickness are characterized by marked reduction in the albumin level and increases in the content of globulins. Therefore, the albumin/globulin ratio decreases. There is a phasic change in the composition of the serum proteins which corresponds to the periods of the clinical course of radiation sickness. In dogs, after irradiation, there is production of sub-fractions of the alpha- and beta-globulins which appear during repeated studies up to the time of death. The appearance of the alpha-and beta-globulin sub-fractions is regarded by the present authors as an unfavorable prognostic sign. Determination of the protein fractions of the serum is an important prognostic test of the characteristics of the course and outcome of radiation sickness. (Author)

Dzhafarov, G. A. K.
CHANGES IN THE PROPERTIES OF MONKEY BLOOD PLASMA WHICH ARE TOXIC FOR PARAMECIA IN ACUTE RADIATION SICKNESS (Zminy Toksychnykh dlya Parametsii Vlastyvostei Plazmy Krovi Mavp pri Gostrii Promenevii Khvorobi). 26 June 61 [13]p. 12 refs. JPRS: 9422.
Order from OTS or SLA $1.60 61-27065

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 1, p. 93-99.

DESCRIPTORS: *Primates, *Radiation sickness, Toxicity, Paramecium, *Blood plasma.

Three groups of Macacus rhesus monkeys were irradiated totally, once only with doses of 930, 837 and 744 r. Blood plasma from the irradiated monkeys was mixed on a slide with a suspension from a culture of paramecia. Each slide contained 2 to 4 paramecia. The toxicity of the monkeys' blood plasma was determined by the rapidity with which it produced death of the paramecia. Determinations of this toxicity were done in each of the 3 groups of monkeys before irradiation, 3 hours after irradiation and daily up to 12 days. In all three groups the toxicity of the plasma increased sharply 3 hours after irradiation. This increase was not in relative proportion to the amount of irradiation. Animals subjected to 930 r had a 133% degree of toxicity; those given 837 r showed increase of 128%; and those given 744 r showed an increase 134%. In all three groups the toxicity dropped markedly on the 10th to 13th day, just prior to death. The levels of toxicity between the first day after irradiation and the day before death fluctuated markedly, varying in patterns between the three groups, and varying greatly in the individual animals.

Nekovaleva, N. A.
CONTENT OF FREE FATTY ACIDS IN THE BLOOD IN RADIATION SICKNESS (Sodarzhanie Svobodnykh Zhirnykh Kisiot Krovi pri Luchevoi Bolezni). 20 July 61 [9]p. 11 refs. JPRS: 9734.
Order from OTS or SLA $1.10 61-27288

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 2, p. 195-199.

DESCRIPTORS: *Radiation sickness, *Blood chemistry *Fatty acids, Blood.

Investigations were made of the content of free fatty acids in the blood (dogs and puppies) with radiation sickness. Before irradiation the content of free fatty acids was higher in males than in females. After irradiation the content of free fatty acids in the blood increases considerably both in mature dogs and in puppies. This indicates that free fatty acids can play a definite part in the intoxication of the organism in radiation sickness. In puppies which were given sunflower oil in the food, the content of free fatty acids in the blood before irradiation was greater than in puppies which were on an ordinary diet, and after irradiation the content of them decreases, which may be explained by the protective effect of linoleic acid introduced in the food.

Pomerantseva, M. D.
THE EFFECT OF NARCOSIS ON THE RADIATION REACTION IN ANIMALS (Vliyanie Narkoza na Luchevuyu Reakts'iyu u Zhivotnykh). [1961] 2p.
Order from OTS or SLA $1.10 61-28664

Partial trans. (summary, p. 423-424) of [Akademiya Nauk SSSR]. Inst[itut] Gen[etiki]. Trudy, 1958, v. 24, p. 409-425.

DESCRIPTORS: *Animals, *Radiation effects, *Radioprotective drugs, Radiation injuries

Pomerantseva, M. D.
REACTION OF THE ORGANISM TO ROENTGEN IRRADIATION DURING NARCOSIS AND SLEEP (Reaktsiya Organizma na Rentgenovskoe Obluchenie vo Vremya Narkoza i Spyachki). [1961] 1p.
Order from OTS or SLA $1.10 61-28665

Partial trans. (conclusions, p. 433) of Akademiya Nauk SSSR. Inst[itut] Gen[etiki]. Trudy, 1958, v. 24, p. 426-434.

DESCRIPTORS: *X-rays, *Sleep, *Radiation effects, Radiation sickness.

Sopin, E. F. and Gaidai, V. M.
EFFECT OF VITAMINS B_1 AND PP ON THE METABOLISM OF CITRIC AND FUMARIC ACIDS IN RADIATION SICKNESS (Vplyv Vitaminiv B_1 ta PP na Obmin Lymonnoyi ta Fumarovoyi Kyslot pri Promenevomu Urazhenni). 20 June 61 [15]p. 14 refs. JPRS: 9456.
Order from OTS or SLA $1.60 61-23608

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961 [v. 33] no. 1, p. 57-62.

Portions of this report will not reproduce well.

DESCRIPTORS: *Radiation sickness, *Therapy, Vitamins, *Thiamine, *Metabolism, Acetic acids, *Fumaric acids, Deficiency diseases, *Citric acids.

Experiments showed that the administration of vitamins B-1 and PP to irradiated animals shows a certain stabilizing effect on the weight and increases their

length of life. The administration of vitamins B-1 and PP increases the intensity of renewal of citric and fumaric acids in the tissues of the irradiated animals.

Tsvetkova, V. V.
THE REACTION OF THE ISLET APPARATUS OF THE PANCREAS DURING THE RADIATION SYNDROME (Reaktsiya Ostrivtsevoho Aparata Pidshlunkovoyi Zalozi pri Promenevomu Syndromi). 17 June 61 [10]p. 9 refs. JPRS: 9420.
Order from OTS or SLA $1.10 61-23615

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 1, p. 76-81.

DESCRIPTORS: *Insulin, *X-rays, Pancreas, *Hyperglycemia, *Histology, *Radiation effects, Endocrine glands, Secretion.

On the second day after irradiation of male rats with X-rays in a dose of 500 r, there was hyperglycemia, while on the tenth day the blood sugar level returned to nearly normal levels. Later hyperglycemia again developed, reaching a peak on the 30th day. Under these conditions the B-cells showed signs of functional exhaustion. In this, the A-cells showed no marked qualitative changes, but there were signs of a reduction in their relative numbers. Changes in the blood sugar level occurred simultaneously with corresponding disturbances in the activity of the insulin-producing tissue of the pancreas. (Author)

Surgery

Demikhov, V. P.
EXPERIMENTAL TRANSPLANTS OF VITAL ORGANS; EXPERIMENTS WITH TRANSPLANTS OF HEART, LUNGS, HEAD, KIDNEYS AND OTHER ORGANS: [SELECTED PARTS] tr. by Tatiana Boldyreff. 12 Sep 61, 33p.
Order from OTS or SLA $3.60 61-28661

Trans. of mono. Peresadka Zhiznenno Vazhnykh Organov v Eksperimente: Opyty po Peresadke Serdtsa, Legkikh, Golovy, Pochek i Drugikh Organov, Moscow, 1960, p. 111-117, 124-126, 143-144, 160-167.

DESCRIPTORS: *Heart, *Transplantation, *Head, *Blood circulation, *Kidneys.

Contents:
Substitution of the heart alone (without lungs)
Kidney transplants: methods
Head transplants: methods
Surgical joining of two organism with maintenance of one single circulation.

Meshalkin, E. N., Alekhina, R. G. and others.
FLUOTHANE ANESTHESIA WITH HYPOTHERMIA IN "DRY" HEART SURGERY (Flyuotanovyi Narkoz s Gipotermiei pri Operatsiyakh na "Sukhom" Serdtse). 26 Oct 61 [7]p. 7 refs. JPRS: 10750.
Order from OTS or SLA $1.10 62-13246

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1961 [v. 6] no. 4, p. 22-24.

DESCRIPTORS: *Ethanes, Freeze drying, *Anesthesia, *Hypothermia, *Heart, *Surgery.

Fluothane was used in "dry" heart surgery on 26 patients in which body temperature was lowered by use of icebags. The technic of obtaining the desired level of anesthesia and of lowering body temperature are described. The prevention and treatment of postoperative complications are outlined. The results in these cases justify recommending fluothane anesthesia with this method of hypothermia for clinical use in neurosurgery, cardiac and general surgery.

Zoology

WORKS OF THE BUREAU OF BIRD BANDING, 1957, VOL. 9: SELECTED ARTICLES, tr. by Zvi Lothane. 1962, 106p. 18 refs, PL-480 Int.
Order from OTS $1.00 62-11001

Trans. of Byuro Kol'tsevaniya. Trudy (USSR) 1957, v. 9, p. 5-45 and 144-207.

DESCRIPTORS: *Birds, Tables, Bird flight, Climatic factors, Distribution, Statistical data, Age, Sex, *Identification.

Contents:
Summary tables of the banding of birds, by T. P. Shevareva
Results of the banding of the widgeon (Anas penelope L.) in the USSR, by E. N. Teplova
Seasonal distribution and migration of the Gadwall (Anas strepera L.) according to data obtained by banding, by V. D. Treus
Seasonal distribution and migrations of the shoveler (Anas clypeata L.) according to banding data, by V. D. Treus.

Ivlev, V. S.
MATHEMATICAL ANALYSIS OF THE POPULATION DYNAMICS OF FISH (Matematicheskii Analiz Dinamiki Chislennosti Ryb). 1961, 10p. 10 refs. PL-480 Int.
Order from OTS $0.50 60-51145

Trans. of Leningrad U. Vestnik (USSR) 1959 [v. 14] no. 9 [Seriya Biologii] no. 2, p. 119-127.

DESCRIPTORS: *Fishes, *Ecology, Economics, Population, Mathematical analysis.

Fluctuation in population numbers is investigated for fish population. Basic conceptions and terms adopted at present are described, and the method of the mathematical investigation of the problem of fish numbers is outlined. The greatest attention is paid to the indices of those various forms of mortality that baffle concrete determination.

Martynova, O. M.
VENATION OF LEPIDOPTERA WINGS (O zhilkovanii Kryl'ev u Cheshuekrylykh (Lepidoptera)) tr. by M. Slade. [1961] [8]p. (foreign text included) 7 refs. [CSIRO] Trans. 5214.
Order from OTS or SLA $1.10 61-28212

Trans. of #Entomologicheskoe Obozrenie (USSR) 1960, v. 39, no. 2, p. 296-299.

DESCRIPTORS: *Butterflies, Moths, Insects, Wings, Physiology, *Veins.

Novikov, G. A.
CARNIVOROUS MAMMALS (Khishchnye Mlekopitayushchie) tr. by A. Birron and Z. S. Cole. 1962, 284p. refs. PL-480 Int.
Order from OTS $3.00 61-11403

Trans. of Fauna S.S.S.R. [Novaya Seriya] 1956, v. 62.

DESCRIPTORS: *Mammals, *Classification, *Anatomy, *Ecology, Economics, Bones, Skull, Teeth, Growth, Age, Body, Measurement, Fur, Agriculture.

The present volume is an attempt to provide the reader, first of all, with a practical aid in identifying predatory animals and, secondly, with basic data on their morphology, distribution and biology, to familiarize the reader with this subject, and at the same time to encourage him to acknowledge the as yet unsolved problems on which attention must be focused. To facilitate the use of the keys they are compiled separately for external features and for skulls. (Unfortunately, in this volume the keys deal only with the features of adult individuals.) Some information on the external appearance of young animals is given in the description of species. Directly after the name of each species, we give not only the principal synonyms for it, but also the most important works on its classification and biology. The morphological and biological descriptions are presented in highly compact form, omitting numerous important anatomical characters and details on the mode of life. The basis on which the classification keys were compiled was a study of the vast collections of the Zoological Institute of the Academy of Sciences of the USSR. In addition, extensive use has been made of previously published keys, such as those by Birulya (1912), Satunin (1914), Ognev (1931, 1935), Bobrinskii, Kuznetsov and Kuzyakin (1944), Stroganov (1951), etc. (Author)

CHEMISTRY

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE, 1940, NO. 3: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 2p.
Order from OTS or SLA $1.10 61-20799

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1940, no. 3, p. 447-466.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, *Acetylene derivatives, Carbinols, Vinyl radicals, Ethynyl radicals, Isomeric transitions, Alcohols, Addition reactions, Boron compounds, Fluorides, Mercury compounds, Oxides, Chemical reactions.

Contents:
Acetylene derivatives. XII. Isomerization of tertiary vinylethynyl carbinols, by I. N. Nazarov and others
Acetylene derivatives. XIII. Mechanism of addition of alcohols to vinylethynyl carbinols under the action of boron fluoride and mercuric oxide, by I. N. Nazarov and V. M. Romanov.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE, 1940, NO. 4: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 4p.
Order from OTS or SLA $1.10 61-20798

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1940, no. 4, p. 493-508, 552-558, 588-589, 592-595.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Glow discharges, Chemical reactions, Reaction kinetics, Hydrogen, Carbon compounds, Monoxides, Sulfides, Oxidation, Spectrographic analysis, Ethynyl radicals, *Acetylene derivatives, Ketones, Alkyl radicals, Vinyl radicals, Synthesis, Polymerization, Catalysts, Catalysis, High pressure research, Conferences.

Contents:
Mechanism of chemical reactions in glowing discharge, by A. B. Shekhter
Spectroscopical investigation of intermediate systems in oxidation of hydrogen, carbon monoxide and carbon disulfide, by V. Kondrat'ev
Acetylene derivatives. XIV. Synthesis of β, β-dialkyldivinyl ketones by isomerization of tertiary vinylethynyl carbinols, by I. N. Nazarov
Acetylene derivatives. XV. Vinyl ketones and their polymerization, by I. N. Nazarov
Convention on heterogeneous catalysis, by S. Z. Roginskii
Conference on Application of High Pressures in Chemistry and Chemical Technology, by S. Lachinov.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE, 1940, NO. 5: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 9p. 9 refs.
Order from OTS or SLA $1.10 61-20797

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1940, no. 5, p. 601-615, 617-626, 681-689.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, *Exchange reactions, Reaction kinetics, Hydrogen compounds, Peroxides, Decomposition, Alloys, Catalysts, Catalysis, Rubber.

Contents:
Kinetic basis of the method of isotope indicators. I. Kinetics of exchange reactions, by S. Z. Roginskii

Composition-heat of activation diagram: Catalytic activity of alloys as revealed in decomposition of hydrogen peroxide, by A. F. Kapustinskii and B. A. Schmelev

Hydrodepolymerization of rubber: New data on the chemical nature of rubber, by M. D. Zelinskii and I. B. Rapoport.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE, 1940, NO. 6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 11p. 24 refs.
Order from OTS or SLA $1.60 61-20796

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1940, no. 6, p. 963-977, 979-982, 997-1015.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Chemical engineering, Chemical industry, High pressure research, Instrumentation, Fuels.

Contents:
Some recent achievements and outlook for the application of high pressures in the basic chemical industries, by S. S. Lachinov

Recent achievements and the outlook for application of high pressures in the motor fuel industry, by I. B. Rapoport

Apparatus of present day high pressure laboratories, by B. A. Korndorf.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE, 1941, NO. 2: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 9p. 4 refs.
Order from OTS or SLA $1.10 61-20794

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 2, p. 297-335.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Hydrocarbons, Chemical reactions, *Acetylene derivatives, Organic acids, Alcohols, Carbinols, Addition reactions, Isomerization, Ketones, Butenes, Polymerization, Scientific research, Colloids, Electrochemistry, Ethynyl radicals.

Contents:
Reactions of gaseous hydrocarbons in silent discharges. II. Mechanism of electrical polymerization of butene, by D. N. Andreev

Acetylene derivatives. XVIII. Mechansim of addition of organic acids to acetylene carbinols, by I. N. Nazarov and T. D. Nagibina

Acetylene derivatives. XIX. Mechanism of addition of alcohols to secondary vinyl ethynyl carbinols under the influence of mercuric salts: isomerization of secondary vinyl ethynyl carbinols into β-alkyl divinyl ketones, by I. N. Nazarov and O. V. Okol'skaya

Institute of General and Inorganic Chemistry of the Academy of Sciences in 1940, by V. G. Kuznetsov

Institute of Organic Chemistry of the Academy of Sciences in 1940, by V. I. Ivanov

Colloid-electrochemical Institute of the Academy of Sciences of USSR. in 1940, by N. A. Figurovskii.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE, 1941 NO. 3: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 5p.
Order from OTS or SLA $1.10 61-20793

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 3, p. 355-360, 401-410, 431-446, 461-465, 469-479.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Ethynyl radicals, Chemists, Nitrobenzenes, Benzenes, Reduction, Catalysts, *Acetylene derivatives, Phenols, Carbinols, Condensation reactions, Physical chemistry, Scientific research, Research program administration, Vinyl radicals.

Contents:
Outstanding achievements of Soviet chemistry

Catalytic reduction of aromatic nitrocompounds, by A. A. Strel'tsova and N. D. Zelinskii

Acetylene derivatives. XXI. Condensation of phenol and p-cresol with dimethylvinylethynylcarbinol and vinylisopropenylacetylene, by I. N. Nazarov and A. I. Kuznetsova

Institute of Chemical Physics of the Academy of Sciences USSR in 1940, by N. N. Semenov

Highlights of the 1941 research plan of the institutes of the Department of Chemistry of the Academy of Sciences USSR, by S. B. Shevelev.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE, 1942, NO. 2/3: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 7p. 16 refs.
Order from OTS or SLA $1.10 61-20298

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1942, no. 2/3, p. 85-86, 125-148, 150-180.
*A complete trans. of p. 125-134 is available from OTS or SLA $1.10 as 61-16658 [1961] 10p.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, *Acetylenes, Polymerization, *Acetylene derivatives, *Carbinols, Methyl radicals, Vinyl radicals, Ethyl radicals, Hydrogenation, Hydrochloric acid, Acids, Allenes, Dienes, Chlorides, Chemical reactions, Ethynyl radicals

Contents:
Letter of the president and the members of the presidium of the All-union D. I. Mendeleev Chemical Society to the President of the British Chemical Society, W. I. Mills

*Chemistry of catalytic hydropolymerization of acetylene, by L. I. Antsus and A. D. Petrov

Acetylene derivatives. XXV. Mechanism of interaction of dimethylvinylethynylcarbinol with hydrochloric acid. Allene-diene rearrangement of 5-methyl-1, 5-dichloro-2, 3-hexadiene, by I. N. Nazarov and others

Acetylene derivatives. XXVI. Stepwise hydrogenation of dimethylvinylethynylcarbinol, by I. N. Nazarov and L. B. Fisher
Chemistry and structure. III. Principles of structural algebra, by A. A. Balandin
October session of the Academy of sciences.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE, 1942, NO. 5: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 6p.
Order from OTS or SLA $1.10 61-20295

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk, 1942, no. 5, p. 237-255, 257-267, 274-285, 307-308, 331.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Ethynyl radicals, Chemists, Gases, Carbon compounds, Monoxides, Carbon dioxides, Infrared radiation, *Acetylene derivatives, Carbinols, Condensation reactions, Dicumarol, Synthesis, Aluminum, Oxidation, Zinc, Copper, Radioactive isotopes, Preparation, Scientific organizations, Symposia, Oxides, Vinyl radicals.

Contents:
Aleksei Nikolaevich Bakh, by S. I. Vol'fkovich
G. N. Lewis and his works in chemistry, by A. F. Kapustinskii
Infrared discharge in molecular gases and its significance in chemical kinetics, by A. N. Terenin and G. G. Neuimin
Acetylene derivatives. XXVIII. Condensation of vinylethynylcarbinols to vinylisocoumarans, by I. N. Nazarov and G. P. Verkholetova
Oxide films on metals. II. Primary oxide film of aluminum, by P. D. Dankov and others
Preparation of pure radioactive copper from zinc, by A. P. Ratner
May session of the Department of Chemical Sciences of the Academy of Sciences USSR.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE, 1942, NO. 6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 8p.
Order from OTS or SLA $1.10 61-20296

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1942, no. 6, p. 368-382, 392-405, 416.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Organic compounds, *Mercury compounds, Hydrocarbons, Addition reactions, Aluminum, Aluminum compounds, Synthesis, Chemical reactions, Phenols, Alcohols, *Acetylene derivatives, Condensation reactions, Ethylenes, Vinyl radicals.

Contents:
Organomercury compounds. XXV. Some products of addition of mercury salts to olefin and diolefin hydrocarbons, by A. N. Nesmeyanov and I. F. Lutsenko
Organomercury compounds. XXVI. Interaction of symmetrical aromatic organomercury compounds with aluminum and synthesis of organoaluminum compounds, by A. N. Nesmeyanov and N. N. Novikova
Acetylene derivatives. XXIX. Condensation of phenol with alcohols of the acetylene and vinylacetylene series, by I. N. Nazarov and A. I. Kuznetsova
Meeting of the department of chemistry Academy of Sciences USSR.

CHEMISTRY, CHEMICAL TECHNOLOGY, AND METALLURGY IN YUGOSLAVIA. 25 Apr 60, 58p. JPRS: 3182.
Order from OTS or SLA $5.60 60-31128

Trans. of mono. Hemija, Hemiska Teknologija i Metalurgija, Belgrade, 1959, p. 6-17, 23-25, 30-34, 42-52, 62-63, 95-106 and 113-126.

DESCRIPTORS: *Chemistry, *Metallurgy, Chemical engineering, *Scientific research, Yugoslavia.

JOURNAL OF APPLIED CHEMISTRY, 1942, VOL. 15, NO. 1/2: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 4p.
Order from OTS or SLA $1.10 61-20333

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1942, v. 15, no. 1/2, p. 25-50 and 56-59.

DESCRIPTORS: *Chemistry, Abstracting, Palladium, Electrolysis, Coatings, Niobium, Steel, Zirconium compounds, Phthalic acids, Fluorine, Determination, Water supplies, *Chemical industry.

Contents:
Use of palladium for electrolytic coatings, by M. A. Klochko and Z. S. Medvedeva
Effect of niobium on nitridation of steel, by N. M. Voronov
Zirconium-alizarin method of determination of fluorine in natural waters, by N. V. Tageeva.

JOURNAL OF APPLIED CHEMISTRY, 1942, VOL. 15, NO. 4: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 14p. 15 refs.
Order from OTS or SLA $1.60 61-20335

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1942, v. 15, no. 4, p. 228-235, 237-247, 249-258, #260-265, 267-272.
Also available from SLA as RT-3601.

DESCRIPTORS: *Chemistry, Abstracting, Adsorption, *Iodine, Hydrology, Peat, Coal, Polymerization, Vinyl radicals, Ethers, Butyl radicals, Synthesis, Dyes, Chemical engineering, Fuels, *Chemical industry.

Contents:
Adsorption of iodine from ground waters (of oil fields) with activated carbon, by A. G. Baichikov and Selimov
Thermal dissolution of solid fuels. II. Peat and brown coal stages, by M. K. D'yakova and N. V. Melent'eva

Research on polymerization of vinyl ethers. I. Vinyl n-Butyl ether, by M. F. Shostakovskii and I. F. Bogdanov
Synthesis and properties of aryl vinyl ethers, by M. F. Shostakovskii and M. S. Burmistrova
Research on dyestuffs in USSR, by N. N. Vorozhtov.

Kornilov, I. I.
METALLOCHEMICAL PROPERTIES OF NIOBIUM. 26 June 61 [8]p. (9 figs. omitted) 6 refs. MCL-948/1.
Order from OTS or SLA $1.10 61-27441

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 135, no. 6, p. 1399-1401.

DESCRIPTORS: *Niobium, Niobium compounds, Alloys, Chemical reactions.

This paper discusses the metallic properties of niobium. The elements of the periodic system are classified according to the types of their interaction with niobium. Some 77 elements are possible components for the formation of metallic alloys with niobium.

REFERATIVNYI ZHURNAL. KHIMIYA (USSR) 1961, NO. 1. ABSTRACTS 1B173-1P100: SELECTED TRANSLATIONS OF ABSTRACTS OF ARTICLES BY CHINESE AUTHORS PERTAINING TO COMMUNIST CHINA (Soviet Abstracts, Chemistry). 8 Jan 62 [51]p. JPRS: 11826.
Order from OTS or SLA $5.60 62-15358

Complete translations of the Russian-language abstracts of articles originally published in the Sino-Soviet bloc.

DESCRIPTORS: *Chemistry, Abstracting, *Physical chemistry, Inorganic substances, Complex compounds Laboratory equipment, Organic compounds, *Chemical engineering, Chemical elements, *Electrochemistry, Ceramic materials, Pharmacology, Medicine, Drugs, Wood pulp, Natural gas, Petroleum, Fuels, Refineries, Rocket fuels, Lubricants, Food, Fats, Cleaning fluids, Polymers, Plastics, Cellulose, Paper, *Chemical industry, Flotation.

Analytical Chemistry

Bogdanova, V. I.
CHROMATOGRAPHIC SEPARATION OF TITANIUM FROM NIOBIUM AND TANTALUM AND THEIR DIVISION. [1961] 12p. (3 illus. 7 tables omitted).
Order from OTS or SLA $1.60 61-23972

Trans. from mono. [Materialy po Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii] (Materials on the Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry) [Moscow, 1959, 424p.].

DESCRIPTORS: *Titanium, *Niobium, *Tantalum, Chemical properties, Separation, *Chromatographic analysis, Cellulose, Organic solvents.

Funakubo, Eiichi, Matsumoto, Suketaro, and Kishigawa, Isamu.
STUDIES ON COAL-TAR CONSTITUENTS AND RELATED COMPOUNDS. 32. RAPID METHOD OF DETERMINING ANTHRACENE IN CARBAZOLE OR ANTHRAQUINONE. [1961] 17p. (2 figs. omitted) 9 refs.
Order from SLA $1.60 61-20933

Trans. of Kogyo Kagaku Zasshi (Japan) 1954, v. 57 [no. 12] p. 919-922.

DESCRIPTORS: *Coal tar, *Carbazoles, *Anthraquinone, Quinones, *Anthracenes, Determination, Quantitative analysis, Chromatographic analysis, Titration, Oxidation.

The chlorobenzene partition-titration method was the simplest accurate method for determining anthracene in low-anthracene material.

Ihnatowicz, Andrzej.
STUDIES ON OXYGEN GROUPS IN BITUMINOUS COAL (Badania nad Grupami Tlenowymi w Weglu Kamiennym) tr. by G. Niemczynow. 1961 [58]p. 57 refs. PL-480 Int.
Order from OTS $0.75 60-21272

Trans. of Glowny Instytut Gornictwa. [Komunikat] (Poland) 1952, no. 125, 39p.

DESCRIPTORS: *Bitumens, *Coal, Chemical analysis, *Oxygen, Alkoxy radicals, Hydroxides, Carbonyl radicals, Carboxyl radicals, Determination, Hyrdolysis.

The experiments were carried out on various types of bituminous coals (from flame coals to anthracite), the various types being represented by samples from different mines and coal seams. The presence of three types of oxygen groups was ascertained: (1) the reactive groups: --COOH, --OH, $>C=O$ occur mainly in low rank coals (more than 13% O) and constitute more than 2/3 of the total oxygen; the $--OCH_3$ group was not found in bituminous coals; (2) the non-reactive groups, which under conditions of mild hydrolysis with alcoholic KOH are converted into --OH and $>C=O$ groups, occur in medium rank coals (8--11% O) and form about 1/2 the total oxygen; and (3) non-reactive, especially stable, groups which are not hydrolzed even under harder conditions occur in all coal types examined, but in amounts (as against total oxygen) depending on the type of coal; the low rank coals contain up to 1/3 of oxygen of these groups, the medium rank coals about 1/2, the high rank coals ($<4\%$ O) more than 4/5.

Kitahara, Saburo, Asahara, Hiromasa, and Atoda, Tetsuzo.
METHOD FOR QUANTITATIVE ANALYSIS OF FREE CARBON IN BORON CARBIDE. Rept. no. 1 on Quantitative Analysis of Impurities in Boron Carbide.
1 June 60, 10p. 3 refs.
Order from SLA $1.10 61-18575

Trans. of mono. [paper] presented at Science Research Institute Meeting (no. 53) Oct 57.

DESCRIPTORS: *Carbon, Chemical analysis, Oxidation, Decomposition, *Boron compounds, *Carbides, Carbon dioxide, Production, Quantitative analysis, Impurities.

The analysis for total carbon content can be obtained by treating a 20- to 25-mg sample in an oxidation bath containing 0.5 g of KIO_3 and 5 ml of concentrated H_2SO_4. It is assumed that free carbon is all decomposed at 240°C and at least 92% of the boron carbide is decomposed. The amount of free carbon can be determined by treating a 50- to 100- mg sample at 110 to 115°C in an oxidation bath consisting of $K_2Cr_2O_7$ (0.5 g), CrO_3 (0.1 g) and H_2SO_4 (2 + 1) 25 ml. The free carbon is oxidized to carbon dioxide which is absorbed by soda-lime and the amount of free carbon determined from the change in weight of the absorbent. It is necessary to run a blank as a small amount of boron carbide is also decomposed by this method. The blanks are determined by treating pure Degussa boron carbide as above and the resulting values used to correct the free carbon results. These procedures gave acceptable results on synthetic samples and production samples.

Knorre, G. F.
A NEW METHOD OF TECHNICAL ANALYSIS OF NATURAL GASES. I. EMPLOYMENT OF GAS ANALYSIS. [1961] 8p. 3 refs.
Order from OTS or SLA $1.10 61-18890

Condensed trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1945, p. 70-79.

DESCRIPTORS: Gases, *Natural gas, Analysis, *Calorimetry.

A simplified method of technical analysis of natural gas is reported based on calculation of the average number of carbon atoms per molecule gas from analytical data for flue gases subjected to additional combustion and using this value for computation of the heating value, specific gravity, amount of air required for combustion, etc., with the aid of formulas derived for these purposes. Regularities for different homologous series are shown. (Author)

Knorre, G. F.
A NEW METHOD OF TECHNICAL ANALYSIS OF NATURAL GASES. II. DIRECT CALORIMETRY. [1961] 3p.
Order from OTS or SLA $1.10 61-18889

Condensed trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1945, p. 185-189.

DESCRIPTORS: Gases, *Natural gas, *Calorimetry, Analysis.

A method and some equipment are described for determination of calorific values of natural gas samples, but also suitable for determination of the calorific value of other gases, such as producer gas. (Author) (See also 61-18890)

Kolsek, J.
A PROCESS FOR THE PAPER CHROMATOGRAPHIC SEPARATION OF SUBSTANTIVE DYESTUFFS.
25 Aug 59, 9p. 5 refs.
Order from SLA $1.10 62-10010

Trans. of Chemiker Zeitung (West Germany) 1959, v. 83 [no. 14] p. 478-481.

DESCRIPTORS: *Dyes, *Paper chromatography, Chromatographic analysis, Organic solvents, Methyl radicals, Phthalates, Pyridines, Water, Separation.

Some 48 examples show that the solvent system dimethylphthalate pryridine-water is suitable for the chromatographic separation of a sizable number of direct dyestuffs.

Koopmans, K.
CHEMICAL ANALYSIS OF WRITING IN INK.
30 June 60, 14p. 12 refs. JPRS: 3468.
Order from OTS or SLA $1.60 60-31312

Trans. of Chemisch Weekblad (Netherlands) 1959, v. 55, p. 109-114.

DESCRIPTORS: *Ink, Chemical analysis, *Paper, Qualitative analysis, Chromagraphic analysis, Spectrographic analysis

A method is described for comparative chemical analysis of writing in ink in which, by means of photometric determination of the paper, data concerning the quantitative composition of the ink used may be obtained. This form of analysis is a development of the existing, generally used qualitative-chemical analysis of writing in ink. (Author)

Spielberger, Georg.
PROCESS FOR PURIFICATION OF ANTHRACENE BY RECRYSTALLIZATION. [1961] 3p. 2 refs.
Order from OTS or SLA $1.10 61-20857

Trans. of German patent appl. DAS 1074024, by Farbenfabriken Bayer A. G., appl. 24 Apr 58, pub. 28 Jan 60.

DESCRIPTORS: Purification, *Anthracenes, Processing, *Crystallization, Chemical analysis.

Crude anthracene is recrystallized from anhydrous ethylene diamine or from ethylene diamine containing less than 5% of water. (Author)

Inorganic Chemistry

Backer, H. J. and Klasens, H. A.
MIXED ESTERS OF TETRATHIOORTHOSILICIC ACID. 18 Mar 47, 11p. 12 refs.
Order from SLA $1.60 62-10100

Trans. of Rec[ueil des] Trav[aux] Chim[iques des Pay-Bas] (Netherlands) 1942, v. 61, p. 500-512.

DESCRIPTORS: *Silicic acids, Acids, *Esters, Synthesis, Thiols, Preparation.

Dolin, P. I.
EFFECTS OF IONIZING RADIATION ON AQUEOUS SOLUTIONS OF INORGANIC COMPOUNDS. [1961] [21]p. (3 figs. omitted) 90 refs.
Order from OTS or SLA $2.60 61-20678

Trans. of Khim[icheskaya] Nauk[a] i Prom[yshlennost'] (USSR) [1959] v. 4 [no. 4] p. 516-521.

Portions of this report will not reproduce well.

DESCRIPTORS: *Inorganic substances, Solutions, *Ionization, *Radiation effects, Electrochemistry.

A literature survey.

Organic Chemistry

SEMICONDUCTING POLYMERS. 12 Apr 61, 3p.
AID Rept. 61-49; AD-255 791.
Order from OTS or SLA $1.10 61-19861

Review of Akademiya Nauk SSSR. Doklady, 1961, v. 136, no. 5, p. 1127-1129; #Akademiya Nauk SSSR Otdelenie Khimicheskikh Nauk. Izvestiya, 1959, no. 12, p. 2261; Byulleten' Izobretenii (USSR) 1960, no. 5, p. 38 (author's certificate no. 126612).
#A complete trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-18143, 8 Aug 60 [2]p.

DESCRIPTORS: *Semiconductors, *Polymers, *Semiconducting films, *Chelate compounds, Ethylenes, Cyano radicals, Electrical properties, Metals.

Contents:
Some electrophysical properties of polymer complexes formed by tetracyanoethylene with metals, by A. A. Berlin and others
#[Polymers from nitriles and copper acetylacetonate] by A. A. Berlin and others
Method of obtaining chelate polymer compounds, by A. A. Berlin and others.

Ardenne, M. von, Steinfelder, K., and Tümmler, R.
EA-MASS SPECTROMETRIC DETERMINATION OF THE NUMBER OF CARBON ATOMS IN ORGANIC MOLECULES FROM THE C^{13}/C^{12} RATIO. [1961] 4p. (2 figs. omitted) 2 refs.
Order from SLA $1.10 61-20881

Trans. of die Naturwissenschaften (West Germany) 1960, v. 47, no. 21, p. 492-493.

DESCRIPTORS: *Hydrocarbons, Molecules, *Carbon, *Atoms, Determination, * Mass spectroscopy.

A method is disclosed for the mass spectrometric determination of the number of carbon atoms in the molecule of a sample by ionization methods which avoid extensive dissociation of the organic vaporized sample molecule in the ion source. (Author)

Arreguine, V.
NEW COLOR REACTION OF THE INDOLE GROUP AND ITS DERIVATIVES. [1961] 5p. 25 refs.
Order from SLA $1.10 61-20947

Trans. of Univ[ersidad] Nac[iona]l, Cordoba. Rev[ista] (Argentina) 1944, v. 31, p. 1710-1714.

DESCRIPTORS: *Indoles, Methyl radicals, Colors, Dyes, Colorimetry, Proteins, Chemical reactions.

Bazhulin, P. A., Bokshtein, M. F. and others.
OPTICAL METHODS OF INVESTIGATION OF HYDROCARBONS. III. SPECTRA OF COMBINATION SCATTERING OF PARAFFINS. [1961] [3]p. 5 refs.
Order from OTS or SLA $1.10 61-20180

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1943, p. 198-204.

DESCRIPTORS: *Hydrocarbons, Raman spectroscopy, Optical spectrometers, Hexanes, Heptanes, Octanes.

Bityukov, V. D.
ORGANIC POLYMERS WITH ELECTRICAL AND MAGNETIC PROPERTIES (Organicheskie Polimery s Elektricheskimi i Magnitnymi Svoistvami) tr. by Marcel I. Weinreich. 26 May 61, 4p.
Order from OTS or SLA $1.10 SCL-T-366

Trans. of Akademiya Nauk SSSR. Vestnik, 1960, v. 30, no. 7, p. 99-100.
Another trans. is available from OTS or SLA $1.10 as 61-27639, DSIR LLU M. 3210 [1961] [2]p.

DESCRIPTORS: Electrical properties, Magnetic properties, *Polymers, Synthesis.

Brief summaries are given of papers that were presented at a conference of physicists and chemists held by the Institute of Electrochemistry of the USSR Academy of Sciences on 21 and 22 January 1960.

Criegee, R. and Schröder, G.
A CRYSTALLIZED INITIAL OZONIDE. Rept. II on Course of Ozone Splitting. [1961] 10p. 16 refs.
Order from SLA $1.10 61-20975

Trans. of Chemische Berichte (West Germany) 1960, v. 93, no. 3, p. 689-693.

DESCRIPTORS: *Ozonides, Production, Crystal structure, Ozone, Butyl radicals, Glycols, Ethylenes, Crystallization.

During ozonization of trans-di-tert.- butyl-ethylene at -75° a crystallization product originates, which at elevated temperatures undergoes exothermic change to a normal ozonide. The constitution of the unstable compound as initial ozonide is shown among other ways by reduction to racemic di-tert. - butyl-ethylene glycol. (Author)

Esafov, V. I.
HALOGENATION OF UNSATURATED HYDROCARBONS, IV. [1961] 7p. 12 refs.
Order from OTS or SLA $1.10 61-20152

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 1001-1006.

DESCRIPTORS: *Halogenation, *Hydrocarbons, Gasoline, Chemical reactions, Chemical bonds, Ethylenes, Processing.

The McIlhiney method for determination of iodine numbers is recommended for detection of groups with quaternary carbon atoms at the double bonds of olefinic and diene hydrocarbons. The content of unsaturated hydrocarbons with quaternary carbon atoms at the double bonds in gasolines produced by liquid phase cracking increases with rise of the boiling range of the gasoline fraction. An interpretation is offered of the processes occurring in halogenation and hypohalogenation of olefinic compounds, according to which the primary determining moment in these reactions consists in fixation of the halogen molecules at the olefinic linkage with subsequent shattering of the atomic bonds eliminating the halogens in nascent state, which predetermines their interaction at high velocities with other substances present in the reaction zone. (Author)

Ferroni, Enzo, Ficalbi, Augusta, and Gabriell, Gabriella.
MONOMOLECULAR FILMS OF PHOTOTROPIC COMPOUNDS, NOTE I. [1961] 6p. 20 refs.
Order from SLA $1.10 62-10054

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1959, v. 89 [no. 3] p. 756-[760].

DESCRIPTORS: Phenyl radicals, Azo radicals, Amines, Naphthyl radicals, *Monomolecular films, Films, Photochemistry, Isomeric transitions.

Gonikberg, M. G., Zhulin, V. M., and El'yanov, B. S.
THE CONNECTION BETWEEN THE CRYSTALLIZATION OF ALDEHYDES AND THEIR POLYMERIZATION TO POLYOXYMETHYLENES, tr. by I. Gawronska. 10 Feb 61, 6p. 17 refs. Courtaulds Misc. Lit. 3270; [DSIR LLU] M. 3121.
Order from OTS or SLA $1.10 61-27537

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 132, no. 2, p. 353-356.
Another trans. is available from ATS $8.00 as ATS-82M42R [1960] 5p.

DESCRIPTORS: *Aldehydes, Crystallization, Polymerization, *Methanes, Chemical reactions

Ishida, Shin-ichi.
STEREOSPECIFIC POLYMERIZATION OF ACETALDEHYDE, -1. 1961, 7p. 3 refs.
Order from SA $50.00

Trans. of Kobunshi Kagaku (Japan) [1961] v. 18, no. 191, p. 187-190.

DESCRIPTORS: *Acetaldehydes, Polymerization, Catalysts, Temperature, Chemical reactions.

Kargin, V. A.
STRUCTURE OF POLYMERS. Chemistry: USSR no. 13. 2 Oct 61 [12]p. JPRS: 10386.
Order from OTS or SLA $1.60 61-28599

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 4, p. 19-26.

DESCRIPTORS: *Polymers, Molecular structure, Microstructure, Crystal structure.

Klenkova, N. I. and Kulakova, O. M.
ETHERIFICATION OF PARTIALLY-HYDROXYETHYLATED CELLULOSES. [1961] 9p. 19 refs.
Order from OTS or SLA $1.10 61-20635

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1959 [v. 32, no. 3] p. 680-686.

DESCRIPTORS: Cotton cellulose, *Cellulose, *Cellulose ethers, Ethers, *Cellulose chemistry, Ethylene oxide, Hydroxyl radicals, Butyl radicals, Chemical reactions.

The treatment of alkali cellulose by ethylene oxide is by a self-originated activated reaction in the structure of the cellulose fibre. Implanted in the structure of cellulose the hydroxyethoxy groups serve as steric obstacles to the binding of cellulose chains; the reagent obtains freer access to hydroxyl groups inside the cellulose fibre. Alkyl halides react significantly more easily with partially-hydroxyethylated alkali cellulose, than with the common alkali cellulose, and yields more highly-replaced end products. The possibility for obtaining highly-replaced butyl cellulose on a base of partially-hydroxyethylated cellulose with good mechanical properties, little hygroscopicity and great acid-resistance was indicated.

Kolesnikov, G. S., Suprun, A. P. and others.
CARBOCHAIN POLYMERS AND COPOLYMERS. XXVI POLYMERIZATION AND COPOLYMERIZATION OF 1, 1, 2-TRICHLOROBUTADIENE-1, 3. [1961] 4p. (3 figs. omitted) 1 ref.
Order from OTS or SLA $1.10

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2 [no. 8] p. 1266-1269.

DESCRIPTORS: *Chloroprenes, *Polymers, Polymerization, Copolymerization.

Polymers of 1,1,2-trichlorobutadiene-1,3 were obtained and the dependence of thermomechanical properties on molecular weight was determined. Copolymers of 1,1,2-trichlorobutadiene-1,3 with styrene and methylmethacrylate were studied and the dependence of thermomechanical properties of the copolymers on their composition was determined. It was shown that 1,1,2-trichlorobutadiene-1,3 copolymerizes with acrylonitrile, vinyl chloride, vinyl acetate, isoprene and bicyclo-(2,2,1)-heptadiene-2,5. (Author) (See aldo 60-22806)

Korshak, V. V. and Matveeva, N. G.
THE INFLUENCE OF STEREOCHEMICAL FACTORS ON THE TENDENCY OF SUBSTITUTED ETHYLENES TOWARD POLYMERIZATION. [1961] 8p. (4 figs. omitted) 7 refs.
Order from OTS or SLA $1.10 61-20938

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 85, no. 4, p. 797-800.

DESCRIPTORS: Substitutes, *Ethylenes, Polymerization, *Stereochemistry.

The substituents in the ethylene molecule influence its tendency to polymerize not only by changing the activity and polarization of the double bond, but also in consequence of a number of steric influences, which make polymerization more difficult and even hinder it completely. (Author)

Köster, R., Reinert, K., and Müller, K. H.
TRIPHENYLBORON FROM ALKYLDIBORANE AND BENZENE. 6 June 60, 2p. 3 refs.
Order from SLA $1.10 61-20937

Trans. of Angew[andte] Chem[ie] (West Germany) 1960, v. 72 [no. 2] p. 78.

DESCRIPTORS: *Phenyl radicals, *Boron, Synthesis, *Alkyl radicals, *Diboranes, *Benzenes, Chemical reactions.

Kursanov, D. N. and Zel'vin, R. R.
A NEW TYPE OF CONDENSATION REACTION UNDER THE INFLUENCE OF ALUMINUM CHLORIDE. [1961] [2]p. 3 refs.
Order from OTS or SLA $1.10 61-20312

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1942, v. 36, no. 1, p. 17-21.

DESCRIPTORS: *Condensation reactions, *Aluminum compounds, *Chlorides, Mixtures, Hydrocarbons, Bromination, Oxidation, Acetic acids, Benzenes, Synthesis, Anthracenes, Alcohols.

Liberman, A. L. and Kazanskii, B. A.
PREPARATION OF 1,1-DIMETHYLCYCLOHEXENES, 1,1-DIMETHYLCYCLOHEXANE AND OF 3,3-DIMETHYL-1-CYCLOHEXANOL FROM DIMEDONE. [1961] 5p. 10 refs.
Order from OTS or SLA $1.10 61-20110

Condensed trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1946, p. 77-82.

DESCRIPTORS: *Cyclohexenes, *Cyclohexanols, *Cyclohexanes, Hexanes, Methyl radicals, Synthesis, Hydantoins, Pentanones, Hydrogenation.

Hydrogenation of 5,5-dimethyl-1,3-cyclohexanedione (dimedone) in the presence of platinized carbon activated with chloroplatinic acid in organic solvents, such as ether, dioxane, acetic acid, yields 10-20% of 1,1-dimethylcyclohexane, and 40-60% of 3,3-dimethyl-1-cyclohexanol; on the other hand, hydrogenation of dimedone as an aqueous suspension over the same catalyst yields only 3,3-dimethyl-1-cyclohexanol. No isomerized products were found. An azeotropic mixture is formed by 1,1-dimethylcyclohexane with dioxane. Pyrolysis of 3,3-dimethyl-1-cyclohexyl acetate gives a mixture of 1,1-dimethyl-2-cyclohexene and 1,1-dimethyl-3-cyclohexene and can serve as a convenient method of their preparation. (Author)

Mamedaliev, Yu. G.
ALKYLATION OF BENZENE WITH PROPENE IN THE PRESENCE OF ALUMINOSILICATES. [1961] 4p. 5 refs.
Order from OTS or SLA $1.10 61-20111

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1946, p. 458-460.

DESCRIPTORS: *Benzenes, *Alkyl radicals, Propenes, Chemical reactions, Aluminum compounds, Silicates, Clay, Catalysts, Catalysis.

Experiments of alkylation of benzene with a gaseous mixture containing 17-19% propane and around 77% propene in the presence of activated gumbrin clay are reported. Under 40 atm pressure at an hourly space velocity of 0.5 and a mole ratio of benzene to propene of 1:0.45 most of the benzene reacted at 350° was converted into cumene. Under a pressure of 60 atm the highest yields of alkylate resulted. The gasoline fraction of the latter obtained per pass reached 36% and the yield of a seven degree fraction containing cumene 56%. The blending octane numbers of two fractions of the product are reported. (Author)

Mochevinskii, P. F.
RECOVERING POLYSTYROL RESIN FROM XYLOL-BEARING FRACTIONS (Poluchenie Polistirol'nikh Smol iz Ksilol'notyazhelyi Fraktsii). 28 July 41, 5p. (1 fig. omitted).
Order from OTS or SLA $1.10 62-10058

Trans. of Koks i Khimiya (USSR) 1940, no. 10, p. 46ff.

DESCRIPTORS: *Styrenes, *Resins, Recovery, Dicumarol, *Xylenes, Fractionation, Polymerization.

Natta, G., Pino, P., and Farina, M.
KINETICS OF POLYMERIZATION OF ETHYLENE CATALYZED BY ALKYL ALUMINUM COMPOUNDS (Cinetica della Polimerizzasione dell'Etilene Catalizzata da Comoposti Alluminio Alchilici). [1961] 12p. (3 figs. omitted) 4 refs.
Order from SLA $1.60 61-20959

Trans. from mono. Symposium on Macromolecular Chemistry [held at] Milan, 27 Sep 54.

DESCRIPTORS: *Ethylenes, *Polymerization, *Reaction kinetics, *Catalysts, *Alkyl radicals, *Aluminum compounds, Molecular weight.

Natta, G., Pasquon, I., and Guiffre, L.
MECHANISM OF THE REGULATION OF THE MOLECULAR WEIGHT OF ISOTACTIC POLYPROPYLENE WITH ZINC ALKYLS. [1961] 2300 words, 16 refs.
Order from CTS (Chem) $9.20 CTS(Chem)-236
subsequent copies $1.50/ea

Trans. of [la] Chimica e [l]'Industria (Italy) 1961, v. 43, no. 8, p. 871-874.

DESCRIPTORS: *Propenes, *Polymers, Molecular weight, Zinc, Alkyl radicals, Polymerization, Titanium compiunds, Chlorides, Ethyl radicals, Aluminum, Catalysts, Catalysis.

Okamura, S., Higashimura, T., and Imanishi, Y.
LOW TEMPERATURE CATIONIC POLYMERIZATION OF α-METHYLSTYRENE AND PROPERTIES OF THE POLYMERS OBTAINED. I. THE SOLVENT EFFECT. [1961] 13p. 9 refs.
Order from RIS $12.50 RIS rept. 61112

Trans. from Kōbunshi Kagaku (Japan) 1959, v. 16, no. 165 [p. 45-48].

DESCRIPTORS: *Styrenes, *Methyl radicals, Polymerization, Temperature, Velocity, *Polymers, Molecular weight, Solubility, Solvent action, Catalysts, Catalysis.

Okamura, S., Higashimura, T., and Imanishi, Y.
LOW TEMPERATURE CATIONIC POLYMERIZATION OF α-METHYLSTYRENE AND PROPERTIES OF THE POLYMERS OBTAINED. II. CHARACTERISTICS OF THE POLYMERS OBTAINED AT LOW TEMPERATURE. [1961] 11p. 6 refs.
Order from RIS $13.00 RIS rept. 61113

Trans. of Kōbunshi Kagaku (Japan) 1959, v. 16 [no. 166] p. 129-132.

DESCRIPTORS: *Styrenes, *Methyl radicals, Polymerization, Temperature, *Polymers, Solubility, Density, Solvent action, Catalysts, Catalysis.

See also (RIS rept. 61112)

Pajaro, Gastone, and Baldi, Luciano.
KINETICS OF THE ISOTOPE EXCHANGE BETWEEN TRIISOBUTYLALUMINUM AND ISOBUTYLENE. [1961] 2750 words, 18 refs.
Order from CTS (Chem) $11.00 CTS(Chem)-239
subsequent copies $1.80/ea

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1961, v. 91, p. 493-503.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Butyl radicals, Aluminum, *Butenes, Exchange reactions, Reaction kinetics, Pyrolysis, Radioactive isotopes.

Pegoraro, Mario.
DEPENDENCE OF THE MOLECULAR WEIGHT DISTRIBUTION OF POLYPROPYLENE ON THE DISTRIBUTION OF ACTIVE CATALYTIC CENTERS [PT. 1]. [1961] 3000 words, 7 refs.
Order from CTS (Chem) $12.00 CTS (Chem)-247
subsequent copies $2.00/ea

Trans. of Ist [ituto] Lombardo [di] Sci[enze e Lettere]. Rend[iconti] (Italy) 1959, v. 93, pt. 1, p. 695-706.

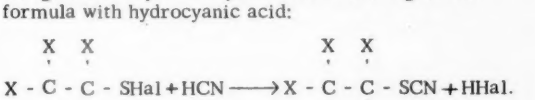
DESCRIPTORS: *Propenes, *Polymers, Molecular weight, Catalysts, Catalysis, Polymerization, Reaction kinetics.

Sasse, Klaus, Wegler, Richard and others.
PROCESS FOR PREPARATION OF HALOGENATED ALKYL THIOCYANATES. [1961] 11p. 2 refs.
Order from OTS or SLA $1.60 61-20872

Trans. of Belgian patent 594,591, by Farbenfabriken Bayer Aktiengesellschaft, Internat. convention date: appl. filed 1 Sep 59, F 29,284 IVb/12o and F29,478 IVb/12o filed 26 Sep 59.

DESCRIPTORS: *Halogen compounds, *Thiocyanates, *Alkyl radicals, Synthesis, Sulfonyl compounds, Chlorides, Hydrocyanic acid, Acids, Chemical reactions, Halogenation, Pest control, Nematodes.

These compounds are made by the reaction of polyhalogenated alkyl sulfenyl chlorides of the general formula with hydrocyanic acid:



The polyhalogenated alkyl thiocyanates thus obtained are characterized by containing in the alkyl compound at least 2 carbon atoms. The carbon atom α with respect to the thiocyano group must carry at least one hydrogen atom and amongst the substituents X on the α or β carbon atoms at least 2 must be halogen atoms. The remaining Xs may be either halogen or hydrogen or organic radicals.

Sergienko, S. R., Gordash, Yu. T. and others.
THE STRUCTURE OF NAPHTHALENE HOMOLOGUES IN THE HIGH-MOLECULAR-WEIGHT FRACTION OF PETROLEUM (O Stroenii Gomologov Naftalina Soderzhaschikhsya v Vysokomolekulyarnoi Chasti Nefti) tr. by E. Feigl. [1961] [35]p. (foreign text included) 8 refs. [CSIRO] Trans. no. 5118.
Order from OTS or SLA $3.60 61-28158

Trans. of [Akademiya Nauk SSSR]. Institut Nefti. Trudy, 1959, v. 13, p. 80-96.

DESCRIPTORS: *Petroleum, *Naphthalenes, *Hydrocarbons, Molecular structure, Molecular weight, Physical chemistry, Ultraviolet spectroscopy, Infrared spectroscopy, Fractionation, Hydrogenation.

The chemical nature of condensed aromatic hydrocarbons of high molecular weight in Radchenkovo crude oil was studied by a combination of chemical and physical methods. Ultraviolet and infrared spectroscopy showed that hydrocarbons containing the naphthalene ring predominate over all other polycyclic high-molecular-weight compounds in the crude oil. Mild catalytic hydrogenation of the high-molecular-weight condensed aromatics in this crude leads to complete elimination of sulfur, which is accompanied by a reduction of the number of rings in the initial material with the molecular weight remaining practically unchanged. This result shows that most of the sulfur in the condensed bicyclic aromatics of the high-molecular-weight fraction of the crude is contained in heterocycles. Hydrogenation completely removes the naphthalene structures in the polycyclic systems, while some of the benzene rings remain preserved. Prolonged heating produces chemical changes in the condensed aromatic hydrocarbons of high molecular weight, even at 300°C. Decyclisation and formation of more highly condensed polycyclic systems are involved in these changes. The higher the temperature the more predominant becomes the second process. (Author)

Shuikin, N. I., Timofeeva, Yu. N. and others.
COMPOSITION OF THE PRODUCTS FROM DEHYDROGENATION OF THE n-ALKANES C_6-C_9 ON ALUMINA-CHROMIA-POTASIA CATALYST. [1961] 7p. 5 refs.
Order from OTS or SLA $1.10 62-10432

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1960, no. 12, p. 2173-2177.
Another trans. is available from ATS $7.50 as ATS-27N50R [1961] 6p.

DESCRIPTORS: *Hydrocarbons, *Dehydrogenation, Catalysts, Hexanes, Octanes, Chemical analysis, Aluminum compounds, Chromium compounds, Potassium compounds, Oxides.

Structures of the alkenes and aromatic hydrocarbons, formed in conversions of C_6-C_9 n-alkanes upon alumina-chromia-potassia catalyst at 500°C and space velocity of 0.5/hour, were investigated. The basic mass of alkenes has the same number of carbon atoms as the starting hydrocarbons. The double bond locates mainly in positions 2, 3 and 4. Small amounts of dienic hydrocarbons were detected in catalyzates of all the n-alkanes. The basic mass of formed aromatic hydrocarbons corresponds by the number of carbon-atoms to the starting hydrocarbons. In addition, also lower boiling aromatic hydrocarbons are present in the catalyzates of n-octane and n-nonane. (Author) (See also 59-10600)

Szczepanik, R.
ISOMERIC MONOMETHYLNAPHTHALENES. VI. STUDY OF AZEOTROPIC AGENTS FOR OBTAINING NAPHTHALENE FROM COAL TAR. [1961] [23]p. (2 figs. 3 tables omitted) 12 refs.
Order from SLA $2.60 61-20854

Trans. of Przemysl Chemiczny (Poland) 1953, v. 9[32] p. 589-596.

DESCRIPTORS: *Coal tar, *Naphthalenes, *Metyl radicals, Fractionation, Separation, Naphtha, Isomers.

Vaiser, V. L.
ALKYLATION OF SOME AROMATIC HYDROXY COMPOUNDS WITH ACETYLENE IN THE PRESENCE OF A CATALYST BASED ON BORON TRIFLUORIDE (Alkilirovanie Nekotorykh Aromaticheskikh Oksisoedinenii Atsetilenom s Pomoshch'yu Katalizatora na Osnove Ftoristovo Bora). [1961] 6p. 7 refs.
Order from OTS or SLA $1.10 61-20927

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 74, no. 1, p. 57-59.
Another trans. is available from ATS as RJ-357.

DESCRIPTORS: Hydroxides, *Phenols, *Resorcinol, *Naphthalenes, *Quinones, *Alkyl radicals, *Acetylenes, Boron compounds, Fluorides, Catalysts, Catalysis, Chemical reactions.

Vansheidt, A. A., Katstov, O. L., and Itenberg, A. M.
SYNTHESIS AND APPLICATION OF STYRENE AND ITS POLYMERS. [1961] 13p. 54 refs.
Order from OTS or SLA $1.60 61-18107

Trans. of Promyshlennost' Organicheskoi Khimii (USSR) 1940, v. 7, no. 11, p. 593-599.

DESCRIPTORS: Synthesis, *Styrenes, Polymers, Polymerization, Dehydrogenation.

Zannetti, R., Manaresi, P., and Buzzoni, G. C.
CRYSTALLINITY AND POLYMORPHISM OF POLY-α-BUTENE. [1961] 4000 words, 10 refs.
Order from CTS(Chem) $16.00 CTS(Chem)-235
subsequent copies $2.70/ea.

Trans. of [la] Chimica e [l]'Industria (Italy) 1961, v. 43, no. 7, p. 735-740.

DESCRIPTORS: *Butenes, *Polymers, Crystal structure, *Polymorphism, Density, X-ray diffraction analysis.

JOURNAL OF PHYSICAL CHEMISTRY, 1940, VOL. 14, NO. 5/6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 7p.
Order from OTS or SLA $1.10 61-20348

Abstract trans. of Zhurnal Fizicheskoi Khimii (USSR) 1940, v. 14, no. 5/6, p. 663-685, 748-773, 801-809. #Complete translations of p. 759-773 are available elsewhere.

DESCRIPTORS: Chemistry, Abstracting, *Catalysts, Poisoning, *Adsorption, *Vapor pressure, *Naphthalenes, *Glycerols, *Camphors, Mechanical properties, Polymerization, Condensation reactions, Measurement.

Contents:
Theory of formation of catalytically-active ensembles on surfaces. IV. Application of the theory to poisoning of catalysts, by N. I. Kobozev
Adsorption of vapors under pressure, by I. R. Krichevskii and R. S. Kal'varskaya
#Low vapor pressures. I. Vapor pressure of naphthalene, camphor and glycerin, by A. A. Zil'berman-Granovskaya
Mechanical properties of monomolecular layers obtained by two-dimensional polymerization and condensation, by S. E. Bresler and others
#Determination of low vapor pressures. II. Vapor pressure of CIS- and trans-isomers, by A. A. Zil'berman-Granovskaya.

[JOURNAL OF PHYSICAL CHEMISTRY OF THE USSR] 1941, VOL. 14, NO. 1: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 2p.
Order from OTS or SLA $1.10 61-20500

Abstract trans. of Acta Physicochimica U. R. S. S., 1941, v. 14, no. 1, p. 27-52.

DESCRIPTORS: *Physical chemistry, Abstracting, Indexes, Explosions, Thermodynamics, Theory, Catalysts, Catalysis, Chemical reactions.

Contents:
Theory of thermal explosions. III. Thermal explosions for autocatalytic reactions, by P. V. Melent'ev and O. M. Todes.

[JOURNAL OF PHYSICAL CHEMISTRY OF THE USSR] 1941, VOL. 14, NO. 2: [TABLE OF CONTENTS] AND SELECTED ABSTRACT. [1961] 3p. 6 refs.
Order from OTS or SLA $1.10 61-20471

Abstract trans. of Acta Physicochimica U.R.S.S., 1941, v. 14, no. 2, p. 279-286.

DESCRIPTORS: *Physical chemistry, Abstracting, Periodicals, Indexes, *Xylenes, *Thermodynamics.

Contents:
Thermodynamic evaluation of ternary systems of o-, meta- and P-xylene, by V. M. Kravchenko.

[JOURNAL OF PHYSICAL CHEMISTRY OF THE U.S.S.R.] 1942, VOL. 16, NO. 3/4: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 2p. 2 refs.
Order from OTS or SLA $1.10 61-20319

Abstract trans. of Acta Physicochimica U. R. S. S., 1942, v. 16, no. 3/4, p. 125-131 and 195-205.

DESCRIPTORS: *Physical chemistry, Abstracting, Periodicals, Indexes, *Halogens, Solutions, Bromine, Pentanes, Iodine, Alcohol, Spectrographic analysis, *Isomeric transitions, Molecular isomerism.

Contents:
Absorption spectra of halogen solutions at low temperatures, by A. Prikhotko
Olisthomerism or glidisomerism, by A. Balandin.

[JOURNAL OF PHYSICAL CHEMISTRY OF THE USSR] 1942, VOL. 16, NO. 5/6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 3p.
Order from OTS or SLA $1.10 61-20318

Abstract of Acta Physicochimica U. R. S. S., 1942, v. 16, no. 5/6, p. 257-271 and 331-347.

DESCRIPTORS: *Physical chemistry, Abstracting, Indexes, Gases, Methanes, Carbon compounds, Monoxides, Carbon dioxide, Acetones, *Electric discharges, Infrared spectroscopy, *Liquid metals, Surface tension, *Molecular weight, Determination, Chemical analysis.

Contents:
Infrared emission of the electric discharge of gaseous molecules and its significance for chemical kinetics, by A. N. Terenin and G. Neuimin
Investigation of electrocapillary phenomena on various liquid metals, by S. Karpachov and A. Stromberg
Molecular weight determination as a means of physicochemical analysis, by V. V. Udovenko.

PROCESS FOR CONTACT POLYMERIZATION OF 1, 3-BUTADIENE. 1961, 13p.
Order from SA $105.00

Trans. of [Japanese published] patent application 2781/1961 (div. of patent appl. 26610/1956) by Phillips Petroleum Co., U. S. A., filed 17 Oct 56, pub. 2& Jan 61 (assertion of priority 30 Apr 56, U. S. A.).

DESCRIPTORS: *Butadienes, Polymerization, Catalysts, Polymers, Chemical analysis, Catalysis.

The process of polymerization of 1, 3-butadiene is described, which comprises bringing said 1, 3-butadiene

into contact with a catalyst system consisting of (a) aluminum hydride complex corresponding to the general formula $MAlH_4$ (where M is lithium, sodium, potassium, rubidium or cesium) and (b) titanium tetrachloride.

Bol'shakov, P.
PARTIAL MOLAL VOLUMES, FUGACITY AND ACTIVITY COEFFICIENTS OF NITROGEN AND HYDROGEN IN THEIR MIXTURES AT HIGH PRESSURES. [1961] 5p. 8 refs.
Order from OTS or SLA $1.10 61-18353

Trans. of Acta Physicochimica U. R. S. S., 1945, v. 20, p. 259-267.

DESCRIPTORS: *Nitrogen, *Hydrogen, Mixtures, Gases, High pressure research, *Activity coefficient.

The partial molal volumes of hydrogen and nitrogen in their mixtures at temperatures ranging from zero to 200°C and pressures up to 1000 atm were calculated from P – V –T data. The rule of Lewis and Randall was found to hold fairly well for the fugacities of hydrogen (nitrogen) upwards of 200°C. (Author)

Breusov, O. N., Vagurtova, N. M. and others.
DISSOCIATION THERMIQUE DU FLUOROBÉRYLLATE D'AMMONIUM $(NH_4)_2$ BeF_4 [On the Thermal Decomposition of Ammonium-fluoro-beryllate $(NH_4)_2$ BeF_4] tr. by Mme. Marette-Floroff. 6 June 61 [18]p. 12 refs. CEA Trans. no. R 1379 (text in French).
Order from OTS or SLA $1.60 62-13801

Trans. in French of #Zh[urnal] Neorg[anicheskoi] Khim[ii] (USSR) 1959, v. 4, no. 10, p. 2213-2219.

DESCRIPTORS: Pyrolysis, *Ammonium radicals, *Fluorides, *Beryllium compounds, Dissociation, Temperature.

Bychkov, Yu. F., Rozanov, A. N., and Yakoleva, V. B
DETERMINATION OF THE SOLUBILITY OF METALS IN LITHIUM. 25 Jan 61, 7p. (figs. refs. omitted)
Order from OTS or SLA $1.10 61-20698

Partial trans. of #Atomnaya Energiya (USSR) 1959, v. 7 [no. 6] p. 531-536.

DESCRIPTORS: *Lithium, Solvent action, *Metals, Solubility.

The solubility of uranium, zirconium, iron, nickel, titanium, molybdenum, niobium, and beryllium, in lithium was determined at 700 to 1000°C in an effort to evaluate the stability of metals in lithium and to clarify the corrosion mechanism. It was established that nickel and beryllium are very soluble (in the order of 0.1%), iron, zirconium, titanium, and uranium are somewhat less soluble (from 0.01 to 0.001%), and niobium and molybdenum are relatively insoluble (less than 10^{-4}%). Lithium crucibles were filled with distilled lithium in a special condenser and hermetically sealed in a container under argon. The solubility of the studied metal was determined by chemical analysis of the rapidly chilled melts after 50 to 100 hours at the given temperature. An isothermal migration of aluminum, beryllium, zirconium, and silicon through lithium in steel and iron was detected. The solubility of metals in lithium under these conditions was achieved less rapidly than in the absence of migration. Lithium may be purified with getters of uranium and zirconium which have a small solubility in lithium. (Author)

Chistorazum, A. A.
THE LENGTH OF MOLECULAR CHAIN OF CIS-POLYDIENE AND TRANS-POLYDIENE. July 53, 4p. 6 refs. NSF-tr-61.
Order from OTS or SLA $1.10 61-20999

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 89 [no. 6] p. 999-1002.
Also available from SLA as RT-221.

DESCRIPTORS: *Molecular structure, *Dienes, Polymers, *Isoprene, Crystallization, Molecular rotation, Valence, Chemical bonds, Bonding, Hydrogenation, Isomers.

Dogadkin, B. A., Skorodumova, Z. V., and Feldshtein, M. S.
EFFECT OF THE CHEMICAL NATURE OF CARBON BLACK SURFACE ON ITS INTERACTION WITH RUBBER AND SULFUR AND ON THE VULCANIZATION KINETICS. [1961] 10p. 17 refs.
Order from OTS or SLA $1.10 61-18593

Trans. of #Kolloidnyi Zhurnal (USSR) 1960, v. 22, no. 6, p. 663-670.

DESCRIPTORS: *Carbon black, Oxidation, Surface area, *Sulfur, *Rubber, *Vulcanization, Temperature, Heptanes, *Reaction kinetics, Catalysts, Additives.

The effect of the chemical nature of active filler surfaces on the vulcanization kinetics was investigated. The quantity of rubber, sorbed from n-heptane solution, and of bound rubber in stocks, prepared by mastication and heated at the vulcanization temperature, calculated per unit surface area of the black, is the greater the less the number of oxygen-containing groups on the surface of the latter. Sulfur chemisorbed on the surface of the black participates in the formation of additional cross-links of the vulcanization structure. Oxidation of the blacks leads to a fall in pH, owing to which the rate of vulcanization is retarded and the limiting amount of chemically bound sulfur and the moduli diminish in value. (Author)

Eidus, Ya. T.
INVESTIGATIONS OF CATALYSTS FOR HYDROGENATION OF CARBON MONOXIDE BY SIMULTANEOUS APPLICATION OF THE DYNAMIC AND STATIC METHODS. IV. KINETICS OF CARBIDE FORMATION AND OF HYDROGENATION OF CARBON MONOXIDE ON COBALT, NICKEL AND IRON CATALYSTS. [1961] 7p. 8 refs.
Order from OTS or SLA $1.10 61-20115

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1946 [no. 4] p. 447-453.

DESCRIPTORS: *Carbides, *Carbon compounds, *Monoxides, Hydrogenation, Catalysts, *Cobalt catalysts, *Nickel catalysts, *Iron catalysts, Reaction kinetics, Catalysis.

Fedosov, A. I.
THE RETARDATION OF THE MOTION OF GAS BUBBLES BY SURFACE-ACTIVE MATERIALS AT MODERATE REYNOLDS NUMBERS (Tormozhenie Dvizheniya Gazovykh Puzyr'kov Poverkhnostoaktivnymi Veshchestvami pri Umerennykh Chislakh Reinol'dsa) tr. by G. Fulford. 3 Aug 60 [8]p. 3 refs. [DSIR NLL]. M. 4634.
Order from OTS or SLA $1.10 62-15708

Unedited trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1959, v. 33 [no. 8] p. 1681-1686.
Another trans. is available from ATS $8.75 as ATS-49L35R [1959] 7p.

DESCRIPTORS: *Bubbles, *Motion, Hydrodynamics, Boundary layer, *Gases, Liquids, *Reynolds number, Velocity, Solubility, Diffusion, Surfaces, Adsorption, Equations, *Wetting agents, *Detergents.
The motion of bubbles in the presence of surface-active materials at moderate Reynolds numbers is considered. With certain approximations, the size of the part of the bubble surface is calculated on which the tangential motion can be considered to be obstructed to a noticeable degree. The concentrations of surface-active material were evaluated at which (a) the surface of the bubble can be considered completely free from the surface-active material, and (b) the bubble moves as a solid sphere. (Author)

Fodorne, Piroska Csanyi.
A STUDY OF THE HYDROGEN-DEUTERIUM EXCHANGE IN THE HETEROGENEOUS PHASE THROUGH ION EXCHANGES. 5 July 60, 31p. JPRS: 3485.
Order from OTS or SLA $3.60 60-31332

Trans. of Magyar Kemiai Folyoirat (Hungary) 1958, v. 64, no. 11, p. 417-428.

DESCRIPTORS: *Hydrogen, Isotopes, *Deuterium, Deuterium oxide, *Ion exchange resins, Resins, *Exchange reactions, Temperature, Hydrogen ion concentration, Velocity, Hydrochloric acid, Sulfuric acid, Acids.

The replacement-exchange of hydrogen by deuterium on cation exchangers (Amberlite IR-120 and Amberlite IRC-50) was investigated in an aqueous solution of deuterium oxide as a function of the type of cation-exchange group, temperature, p_H of the solution, and grain size of the resin. The speed of exchange and the final mol-fraction of deuterium is greater for the sulphonic acid resin than for the carboxylic resin, although the ion-exchange capacity of the carboxylic resin is greater. At 20 C^o there is no measurable exchange between deuterium oxide and the hydrogen atoms of the cation-exchangers, but it increases with temperature to approximately 75 C^o, after which it decreases because of damage to the resin. In both resins the speed of exchange increases with increase in temperature. The final exchanged quantity in Amberlite IR-120 increases with the decrease in p_H because of the exchange reactions between hydrochloric or sulphuric acid and the deuterium oxide. In Amberlite IRC-50 the exchange capacity decreases with the decrease in p_H, because dissociation of the carboxylic groups is suppressed. In both resins, however, the speed of exchange is greater in an acidic solution than in a neutral solution.

Gopienko, V. G.
PRODUCTION OF TITANIUM DI- AND TRICHLORIDE. [1961] 6p. 21 refs.
Order from OTS or SLA $1.10 61-18590

Trans. of #Zhur[nal] Prikla[noi] Khimii (USSR) 1960, v. 33 [no. 11] p. 2600-2603.

DESCRIPTORS: Production, *Titanium compounds, *Chlorides, Electrochemistry, Metallurgical analysis, Polymerization, Catalysts.

A method for production of $TiCl_2$ and $TiCl_3$ in pure state by reduction of titanium tetrachloride with metallic titanium was applied and developed at a laboratory scale. Optimal conditions for $TiCl_3$ production are: temperature 900 C and pressure of $TiCl_4$ 0.3-0.5 atm; for $TiCl_2$ - temp. 1030-1050^o, pressure of $TiCl_4$ 0.3-0.5. Under the mentioned conditions titanium di- and trichloride were produced simultaneously. The method is characterized through the process rate of 0.7-1.4 g $TiCl_4$ per cm^2 of metal surface and permits production of up to 99% pure titanium di- and trichloride. (Author)

Karlykov, D. N.
X-RAY INVESTIGATION OF THE SHORT DISTANCE ORDER OF LIQUID ZINC-IN-MERCURY SOLUTIONS. [1961] [6]p. 7 refs.
Order from OTS or SLA $1.10 61-28172

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1958, v. 3, no. 3, p. 370-374.

DESCRIPTORS: X-rays, *Liquid metals, *Zinc, *Mercury, Solutions, X-ray diffraction analysis.

An analysis of the diffraction pattern that is observed in scattered X-radiation of liquid amalgams of zinc indicates that they belong to the group of physical solutions.

Kishinevskii, M. Kh. and Serebryanskii, V. J.
ON THE MECHANISM OF THE TRANSFER OF MASS IN BOUNDARY LINE GAS-LIQUID DURING INTENSIVE STIRRING. [1961] 6p. 8 refs. [DSIR LLU]. M. 2731.
Order from OTS or SLA $1.10 61-23336

Unedited trans. of #Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1956, v. 29, p. 27ff.

DESCRIPTORS: Water, Absorbents, Gases, Absorption, Gas diffusion, *Mass transfer, Turbulent flow.

Experiments show that in conditions of considerable turbulence, molecular diffusion plays in practice an insignificant part in the processes of mass transfer with free surfaces in the volume. The decisive factor in this process is turbulent diffusion. (Author)

Kuroiwa, Daisuke and Yamaji, Kenju.
INTERNAL FRACTION OF POLYCRYSTALLINE AND SINGLE-CRYSTAL ICE, tr. by E. R. Hope. 1961 [21]p. 10 refs. NRCC Technical trans. 978.
Order from NRCC $1.50 NRCC C-3757

Trans. of Teion Kagaku. [Butsuri Hen] (Japan) 1959, v. 18, p. 97-114.

DESCRIPTORS: *Internal friction, *Single crystals, *Ice, Liquified gases, Refrigeration systems, Cryogenics, Thermal radiation, Glaciers, Solids, Deformation.

Levich, V.
THEORY OF DIFFUSION KINETICS OF HETEROGENEOUS CHEMICAL PROCESSES. II. REACTIONS OCCURRING AT THE INTERFACE BETWEEN A SOLID BODY AND A LIQUID IN TURBULENT MOTION (Teoriya Diffussionnoi Kinetiki Geterogennykh Khimicheskikh Protsessov. II. Reaktsii, Protekayushchie na Granitse Tverdoe Telozhidkost' pri Turbulentnom Techenii) tr. by G. Fulford. Oct 60, 10p. 2 refs. [DSIR NLL] M 4282.
Order from OTS or SLA $1.10 62-13129

Unedited trans. of Zhurnal Fizicheskoi Khimii (USSR) 1948, v. 22 [no. 6] p. 711-720.

DESCRIPTORS: *Diffusion theory, Kinetic theory, *Chemical reactions, *Solids, *Liquids, *Turbulent flow, Boundary layer, Particle trajectories, Motion, Velocity, Fluid flow, Separation, Blunt bodies, Liquid jets, Reynolds number, Wake, *Reaction kinetics.

Levich, V.
THEORY OF DIFFUSION KINETICS OF HETEROGENEOUS CHEMICAL PROCESSES. III. REACTIONS OCCURRING AT GAS-LIQUID INTERFACES (Teoriya Diffusionnoi Kinetiki Geterogennykh Khimicheskikh Protsessov. III. Reaktsii, Protekayushchie na Granitse Razdela Shidkost' -Gaz) tr. by G. Fulford. Nov 60, 10p. 3 refs. [DSIR NLL] M 4286.
Order from OTS or SLA $1.10 62-13133

Unedited trans. of Zhurnal Fizicheskoi Khimii (USSR) 1948, v. 22 [no. 6] p. 721-729.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 61-13506, AERE Trans-11/3/5/273.
DSIR LLU M.1662, Jan 53, 16p.

DESCRIPTORS: *Diffusion theory, Kinetic theory, *Chemical reactions, *Gases, *Liquids, Convection, Absorption, Boundary layer, Surfaces, Fluid flow, Velocity, Equations, Turbulence, Transformations (Mathematics), Solids, *Reaction kinetics.

(See also 62-13129)

Losev, S. A.
GAS EQUILIBRIUM BEHIND THE SHOCK WAVE IN OXYGEN, NITROGEN AND THEIR MIXTURES WITH XENON. 23 Oct 61 [9]p. 4 refs. MCL-1347/1+2.
Order from OTS or SLA $1.10 62-13062

Unedited rough draft trans. of [Moscow] U. Vestnik. Seriya 3: Fizika, Astronomiya (USSR) 1960 [v. 15] no. 5, p. 47-52.

DESCRIPTORS: Gases, *Oxygen, *Nitrogen, *Xenon, *Shock waves, Dissociation, Thermodynamics, Chemical equilibrium

The calculation of the values of the thermodynamic parameters of a gas behind a direct shock wave in O_2, N_2 and their mixtures with Xe, assuming instantaneous establishment of equilibrium, is given. The calculations were made on a high-speed electronic computer. It is shown that the addition of xenon to oxygen and nitrogen noticeably raises the temperature and the degree of dissociation of the molecular components of the mixture. (Author)

Losev, V. V. and Kabanov, B. N.
ELECTROCHEMICAL BEHAVIOR OF IRON IN HOT CONCENTRATED ALKALI SOLUTIONS, PT I. (Elektrokhimicheskoe Povedenie Zheleza v Goryachikh Kontsentrirovannykh Rastvorakh, I. 1961, 19p. 24 refs. N R L Trans. no. 848.
Order from OTS or SLA $1.60 61-27187

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1954, v. 28, no. 5, p. 824-836.

DESCRIPTORS: *Iron, Electrical properties, Chemical properties, Metals, Solutions.

The process of anodic dissolution of iron in 10 N NaOH at 80° proceeds irreversibly; the coefficient of the slope of the curve denoting a relationship between the potential and the logarithm of current density is 0.04 to 0.05 v. The mechanism of this process is the same as that of the anodic dissolution of iron at lower temperatures in more dilute alkali solutions. The stationary potential of the iron electrode is displaced to the positive side as compared with an equilibrium potential. With anodic dissolution of iron and an addition of bivalent and trivalent iron ions a passivating oxide film is formed on the electrode, the surface concentration of which depends on the concentration of iron ions in a solution. The value of the product of solubility of the magnetic iron oxide was determined approximately and it was indicated that a partial passivation of an electrode at relatively low anodic current densities cannot be accomplished by covering a part of the surface with a phase layer of this oxide. The capacitance of an iron electrode in alternating current was measured. During the first process, the

electrode capacitance is reduced almost twofold; the progress of the second process is accompanied by the appearance of a high maximum on the curve denoting the capacitance as a function of the potential.

Lutskie, A. E. and Obykhova, E. M.
ON THE ISOTOPE EFFECT ON THE VISCOSITY OF LIQUIDS. [1961] [3]p. 7 refs.
Order from OTS or SLA $1.10 61-27879

Trans. of Ukrain[skii] Khim[icheskii] Zhur[nal] (USSR) 1959, v. 25, p. 274-275.

DESCRIPTORS: *Deuterated compounds, Water, Heavy water, Butanols, Acetic acid, Acids, Propanols, Viscosity, Temperature, Deuterium, Hydrogen, Liquids, Molecular structure, Physical properties.

Objections are raised to some of the conclusions drawn by S. D. Ravikovich and V. P. Solomko (Ukrain. Khim. Zhur. 24: 7-12, 1958; available in translation from OTS or SLA $1.10 as 61-27801) from their experimental data.

Malyusov, V. A., Umnik, N. N., and Zharoronkov, N. M.
MASS TRANSFER IN PROCESSES OF FILM RECTIFICATION - TURBULENT VAPOR FLOW (Massoobmen v Protsesse Plenochnoi Rektificatsii - Turbulentayi Potok Para). [1961] 3p. 8 refs. (DSIR LLU] M. 2748.
Order from OTS or SLA $1.10 61-23320

Unedited trans. of Akad[emiya] Nauk SSSR. Doklad[y] 1955, v. 105, no. 5, p. 1057ff.

DESCRIPTORS: Vapors, Turbulent flow, Separation, *Mass transfer.

The equation $h_{og} = 11.1 d^{0.64} Re_g^{0.23} Pr_g^{0.67}$ is recommended for calculating the rectification process in the range of Reynolds numbers $Re_g = 100$ to 15,000. (See also 59-18628, 61-23315)

Malysov, V. A., Umnik, N. N., and Zhavoronkov, N. M.
MASS TRANSFER IN THE PROCESS OF FILM RECTIFICATION-LAMINAR VAPOR FLOW (Massoobmen v Protsesse Plenochnoi Rektifikatsii-laminarnyi Potok Para). [1961] 3p. 3 refs. [DSIR LLU] M. 2754.
Order from OTS or SLA $1.10 61-23315

Unedited trans. of Akad[emiya] Nauk SSSR. Doklad[y] 1955, v. 105, no. 4, p. 779ff.

DESCRIPTORS: Vapors, *Mass transfer.

The equation $h_{og} = 0.068 Re_g Pr_g$ is recommended for film rectification in the range of Reynolds numbers from $Re_g = 200$ to 800 or 1000. Here h_{og} represents the height of a unit of mass transfer. (See also 61-23320)

Natanson, E. M.
COLLOID METALS [SELECTED PARTS]. 17 Mar 61 [93]p. (7 figs. omitted). MCL-497/1+2. AD-259 601
Order from OTS or SLA $8.60 61-27162

Unedited rough draft trans. of mono. Kolloidnye Metally, Kiev, 1959, p. 302-327.

DESCRIPTORS: *Colloids, *Metals, Phase studies, Magnetic properties, Alloys, Metal powders, Machines, Industrial equipment, Corrosion resistant alloys, Rubber, Bonding, Cements.

Information is presented on: (1) antifriction properties of the dispersed phases in metal sols; (2) the magnetic properties of the dispersed phases of sols of metals and alloys; (3) the use of highly dispersed metal powders in the machine building industry; (4) corrosion resistant highly dispersed metallic powders; and (5) structure-forming properties of dispersed phases of sols of metals in contact with rubber cement.

Nikolaev [A. P.]
MASS TRANSFER DURING DISTILLATION IN TUBULAR FILM COLUMNS. [1961] 5p. (diagrs. refs. omitted). [DSIR LLU] M. 2757.
Order from OTS or SLA $1.10 61-23312

Unedited trans. of #Zhurn[al] Priklad[noi] Khimii (USSR) 1958, v. 31 [no. 5] p. 711-[718].

DESCRIPTORS: Vapors, Turbulent flow, Separation, *Mass transfer.

In film distillation in tubes, there are clearly established three characteristic zones in the importance of the relative lengths of the tubes greater than 100, distinguished by the regime of motion of the vapour phase: laminar, transitional, and turbulent. The boundaries between the zones become more marked with increase of ratio ℓ/d. In each of the zones the dependence of the mass transfer coefficient on the Reynolds criterion is different. The relative length of the tube has an effect on the positions of the boundaries between the zones, and on the sizes of the coefficients of mass transfer. This influence is particularly noticeable in the laminar and transitional zones of vapour flow. The use of artifical turbulisation of the vapour stream by means of spiral insertions in the tubes allows the coefficients of mass transfer to be increased by 2 to 3 times in comparison with the coefficients in tubes which operate without the use of the insertions. It is possible for the tubes to operate stably in the emulsification regime, which is marked by a high efficiency. (Author)

Roginskii, S.
NATURE OF THE ACTIVE SURFACE OF METALLIC CATALYSTS. [1961] [1]p. 4 refs.
Order from OTS or SLA $1.10 61-20817

Reprint of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 30, no. 1, p. 23-25.

DESCRIPTORS: *Gases, *Catalysts, Ethylenes, Hydrogen, Oxidation, *Metal films, Vapors, Condensation, Iron, Nickel, Tungsten, Palladium, Platinum.

Experiments are reported showing the important effect of gases on the catalytic properties of metallic surfaces. Removal of gases from the surface of palladium, iron, nickel, tungsten and especially platinum, resulted in complete inactivation of the catalysts as revealed by hydration of ethylene and oxidation of hydrogen. When gases are introduced into the metallic film produced by condensation of vapors, clearly expressed promotion curves can be obtained. No difference is thus shown to exist between simple and mixed catalysts. (Author)

Schäfer, Harald.
REMARKS ON FORMATION OF HIGHER SILICON CHLORIDES IN A CHILLED TUBE (Bemerkungen zur Entstehung Höhermolekularer Siliciumchloride im Abschreckrohr). [1961] [6]p. 12 refs.
Order from SLA $1.10 61-20532

Trans. of Z[ei]tschr[ift] f[ur] Anorg[anische] Chemie (East Germany) 1953, v. 274, p. 265-270.

DESCRIPTORS: *Silicon compounds, *Chlorides, Molecular weight, Synthesis, Thermodynamics, Gases, *Cooling.

The mechanism of formation of higher-molecular-weight silicon chlorides upon synthesis in a suddenly cooled tube is discussed. It is made plausible that chlorides Si_nCl_{2n+2} are formed because the thermodynamically stable chief constituents of the gaseous phase present at high temperature, $SiCl_4$ and $SiCl_2$, undergo addition upon sudden cooling: $SiCl_4 + (n-1)\ SiCl_2 = Si_nCl_{2n+2}$. (Author)

Smagina, E. I., Kutsev, V. S., and Ormont, B. F.
INVESTIGATION OF THE EQUILIBRIUM IN THE SYSTEM ZIRCONIUM-NITROGEN AT HIGH TEMPERATURES, AND OF THE FREE ENERGY OF FORMATION OF ZrN_x AS A FUNCTION OF ITS COMPOSITION AND STRUCTURE. 15 Sep 61 [24]p. 31 refs. JPRS: 10232.
Order from OTS or SLA $2.60 61-28607

Trans. of Problemy Fizicheskoi Khimii (USSR) 1959, no. 2, p. 118-131.

DESCRIPTORS: Refractory materials, Transition elements, *Zirconium compounds, *Nitrides, Chemical equilibrium, *Thermochemistry, Decomposition, Temperature, Pressure.

A method was developed for the study of equilibria in refractory nitride systems at temperatures of 1500 to 2800 °K. The equilibrium in the system ZrN_x - N_2 was studied in a temperature range of 2000 to 2800 °K, pressures 0.1 to 300 mm Hg, and in the region of changes in x from 0.7 to 1.0. The equilibrium compositions were established as a function of the temperature and pressure. The composition ZrN is a particular case. The decomposition equation $ZrN \rightarrow Zr + 1/2\ N_2$ adopted in the literature was confirmed. The heats and free energies of formation, upon changing the composition of ZrN_x, are significantly varied, which must follow from the thermodynamic calculations. Upon changes in composition from $ZrN_{0.56}$ to $ZrN_{1.0}$ the heats of formation vary from 56,100 to 87,900 cal/mole. Conditions of formation were studied and a method was developed for obtaining zirconium nitrides of a desired composition. (Author)

Svetlov, B. S.
THE THERMIC DECOMPOSITION OF NITROGLYCERIN IN THE LIQUID PHASE. [1961] 12p. (4 figs. omitted) 10 refs.
Order from OTS or SLA $1.60 61-20740

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2 [no. 1] p. 38-43.

DESCRIPTORS: Pyrolysis, *Nitroglycerin, Liquefied gases, Phase studies.

The thermic decomposition of nitroglycerin in the liquid phase at 80-140° in the presence of decomposition products was studied. It was established that in the decomposition of nitroglycerin are present two macroscopic steps, the course of which is related only to the content of decomposition product, but not with its degree. In the first step the decomposition is characterized by practical absence of the influence of gaseous products on the rate of gas formation and a significant influence of the degree of filling up of the reaction vessel on the value of the initial rate of formation of gases, and the temperature coefficient normal for nitro esters. In the second step of decomposition the rate of formation of gases depends on the pressure of gaseous products of decomposition approximately to the second power and can exceed the initial rate at least several hundred times. The results are considered in the light of the suppositon concerning the simultaneous occurrence of two decomposition processes of nitroglycerin. (Author)

Vakhidov, R. S. and Kir'yakov, G. Z.
THE PART PLAYED BY MANGANESE IN THE ELECTROLYTIC DEPOSITION OF ZINC (O Roli Margantsa pri Elektroosazhdeniya Tsinka). 28 Feb 61 [11]p. 27 refs. RTS 1626.
Order from OTS or SLA $2.40 61-15866

Trans. of Izvestiya Vysshikn Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1959 [v. 2] no. 2, p. 238-243.

DESCRIPTORS: *Manganese, Electrolytes, *Zinc, Metals, Electrolysis, *Electrodeposition, Electrochemistry, Valence.

Tests showed that manganese may be present in a zinc electrolyte in the form of divalent ions, dioxide, or permanganate ions. Even in large quantities divalent manganese ions have very little effect on the electrolytic deposition of zinc, only slightly reducing the cathode efficiency. Amounts of manganese dioxide exceeding 1 to 3 g/ℓ greatly reduce the cathode efficiency, but improve zinc deposit quality. The permanganate ions exert the most harmful effect. At high temperatures and low current densities, with permanganate present the cathode efficiency decreases by

tens of per cent, and may even reach zero. Potassium permanganate exerts a similar effect to manganese dioxide on the quality of zinc deposits.

Vol'dek, A. I.
POMPES ÉLECTROMAGNÉTIQUES POUR LES MÉTAUX LIQUIDES (Elektromagnitnye Nasosy dlya Zhidkikh Metallov) [Electromagnetic Pumps for Liquid Metals] tr. by N. Nedelko. 11 Sep 61 [22]p. 6 refs. CEA Trans. no. R 1389 (text in French).
Order from OTS or SLA $2.60 62-13810

Trans. in French of #Elektrichestvo (USSR) 1960, no. 5, p. 22-27.

DESCRIPTORS: *Liquid metals pumps, *Electromagnetic pumps, Particles, Metals, Magnetic fields, Electric currents, Thermal conductivity, Electrochemistry.

Zgonnik, V. N., Kropachev, V. A. and others.
REACTIONS OF ETHYLLITHIUM WITH TITANIUM TRICHLORIDE. Communication 4 of Reactions of Metalloorganic Compounds with Salts of Heavy Metals. [1961] 7p. 11 refs.
Order from OTS or SLA $1.10 62-10441

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1960, no. 12, p. 2156-2161.

DESCRIPTORS: *Metalorganic compounds, Chemical reactions, *Heavy elements, *Salts, *Lithium compounds, *Titanium compounds, *Chlorides, Ethyl radicals, Reaction kinetics.

Ethyllithium reacts with titanium trichloride at low temperatures, forming ethane, ethylene and butane, whereby the gas composition is determined through the correlation of reacting components. Titanium halides catalyze the ethyllithium decomposition to ethylene and lithium hydride. (Author)

EARTH SCIENCES

INFORMATION ON SOVIET METEOROLOGY AND HYDROLOGY. 29 Sep 61 [32]p. JPRS: 8958.
Order from OTS or SLA $3.60 61-28513

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 5, p. 24-26, 49-58, 60-61.

DESCRIPTORS: *Hydrology, *Meteorology, Cyclones, Agriculture, Water, Water supplies, Inland waterways, Ice, Erosion, Dams, Scientific research, Geophysics.

Contents:
On the problem of cyclone and anti-cyclone displacement, by N. I. Pavlov
"Sel'skokhozyaystvennaya Meteorologiya" (Agricultural Meteorology) by V. I. Vitkevich, Moscow, 1960: book review by L. G. Broido and others.
"Razvitie Gidrologii Sushi v Rossii" (Development of land hydrology in Russia) by I. A. Fedoseev, Moscow, 1960: book review by A. A. Sokolov
Transactions of scientific research establishments of the hydrometeorological service USSR in 1960
Collection of works of the hydrometeorological service USSR in 1960
Summary session of the Scientific Council of the Main Geophysical Observatory i meni A. I. Vocikov, by E. A. Polyakova.

Chang, Keng-sheng.
THE GROWTH OF THE INSTITUTE OF HYDROGEOLOGY AND ENGINEERING-GEOLOGY SINCE THE ESTABLISHMENT OF THE COUNTRY. 6Sep 61 [9]p. JPRS: 4950.
Order from OTS or SLA $1.10 61-28603

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 10, p. 7-8.

Portions of this report will not reproduce well.

DESCRIPTORS: *Hydrology, *Geology, Engineering, Dams, Chemical analysis, Water, Ores, Deposits, *Scientific research, *Research program administration.

Chebotarev, N. P.
SUBSURFACE RUNOFF AND VARIATIONS IN ANNUAL RUNOFF (O Podzemnom Stoke i Variatsii Godovogo Stoka). 1961, 7p. 7 refs. PL-480 Agr.
Order from OTS $0.50 60-21878

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 1, p. 37-40.

DESCRIPTORS: *Hydrology, Inland waterways, *Drainage, Determination.

Fel'zenbaum, A. I., Fomin, L. F., and Shtokman, V. B.
METHOD FOR CALCULATION OF THE DEEP SEA CURRENTS FROM THE SURFACE CURRENT AND THE GRADIENT OF THE ATMOSPHERIC PRESSURE (Metod Rascheta Glubinnykh Morskikh Techenii po Poverkhnostnomu Techeniyu i Gradientu Atmosfernogo Davleniya). 1961, 21p. 13 refs. PL-480 Int.
Order from OTS $0.50 61-11407

Trans. of Akademiya Nauk SSSR. Institut Okeanologii. Trudy, 1957, v. 25, p. 153-170.

DESCRIPTORS: *Ocean currents, Velocity, Atmosphere, Pressure, Wind, Gusts, Drift, Marine, Meteorology, Surface properties, Numerical methods and procedures.

The present paper is an attempt to develop a method for the calculation of current velocities at various levels from the surface currents (measured by the modern instruments, primarily the electromagnetic current meter and the Loran-type instrument). Use of the data on observed velocities of the surface currents eliminates the necessity of constructing the wind

field or the atmospheric pressure field over the entire basin; it is sufficient to have the data on the atmospheric pressure distribution only above the region under investigation. (Author)

Climatology and Meteorology

STUDIES ON TEMPERATURE, DISTRIBUTION, WIND VELOCITY, AND WEATHER FORECASTING. 9 Jan 62 [53]p. 143 refs. JPRS: 11845.
Order from OTS or SLA $5.60 62-15442

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 9, p. 3-22, 29-33, 46, 60.

DESCRIPTORS: *Temperature, *Wind, *Velocity, *Weather forecasting, Atmosphere, Scientific personnel, Meteorology, Hydrology, Oceanography.

Contents:
Basic properties of temperature distribution in the atmosphere at different seasons (in strata 0-100 km) by V. R. Dubentson
On the statistical law of wind velocity distribution, by I. G. Guterman
On the application of foreign methods of monthly weather prognoses in the European part of the USSR and western Siberia, by V. G. Shishkov
Scientists in close cooperation with aviators, by S. S. Papandopulo
Meteorology, hydrology, and oceanography in 1960: Literature. II. Articles in periodicals and collections.

Balabanova, V. N. and Vyadrov, G. I.
METHODS OF INTRODUCTION OF REAGENTS INTO CLOUDS FOR THE PURPOSE OF INFLUENCING THEM. [1961] [4]p. 4 refs.
Order from OTS or SLA $1.10 61-20095

Trans. of #Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya] Geofiz[icheskaya] 1961, no. 6, p. 951-952.

DESCRIPTORS: *Reagents, *Clouds, Particles, Nuclei, Drops, Crystallization, Silver compounds, Iodides, Artificial precipitation.

Dolgin, I. M., ed.
PHYSICS OF CLOUDS AND MISTS, NO. 1 [Voprosy Fiziki Oblakov i Tumanov]. 5 Oct 61 [197]p. 101 refs. JPRS: 10330.
Order from OTS or SLA $13.50 61-28620

Trans. of [Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Trudy] 1959, v. 228.
##Alternate translations are available as indicated.

DESCRIPTORS: *Clouds, *Fog, Arctic regions, Kara Sea, *Stratus clouds, *Cumulus clouds, *Ice, *Aerosols, *Carbon dioxide, Solidified gases, Particles, Silver compounds, Iodides, Smokes, *Smoke generators, Meteorology, *Artificial precipitation, Airplanes, Sublimation, *Atmosphere, Ice fog, Moisture, Climatic factors, Heat transfer, Meteorological instruments, Hygrometers, Design.

Contents:
##Methods of examining mists and clouds, by A. I. Voskresenskii (OTS or SLA $1.60, 61-23707)
Theory of the formation and evolution of stratified clouds, by L. T. Matveev
##Aerological aspects of sea mists, by P. A. Vorontsov (OTS or SLA $2.60, 61-23708)
##Microphysical parameters of low-level cloud and mist, by A. L. Dergach (OTS or SLA $2.60, 61-28830)
##Transparency of clouds and mists, by G. M. Zabrodskii and V. G. Morachevskii (ATS-27M45R, $26.95)
##Structure of summer mists near Dixon Island, by P. A. Vorontsov and V. I. Selitskaya (OTS or SLA $1.60, 61-28827)
##A study of frontal clouds, by A. L. Dergach (ATS-20M41R, $19.75)
Temperatures near the upper boundary of extensive mists and stratified clouds, by V. A. Zaitsev and A. A. Ledokhovich
##Meteorological conditions for icing in clouds of types St and Sc, by A. I. Voskresenskii and K. I. Chukanin St and Sc, by A. I. Voskresenskii and K. I. Chukanin (OTS or SLA $1.60, 61-23704)
##Efficiency of CO_2 particles and AgI smoke in dispersing supercooled low-lying cloud and mist, by V. G. Morachevskii and V. Ya. Nikandrov (OTS or SLA $1.60, 61-28824)
##Water content of mists in the Arctic, by V. Ya. Nikandrov (OTS or SLA $1.10, 61-28825)
##Cumulus rain clouds, by A. L. Dergach (ATS-23M41R, $11.50)
##Apparatus for treating supercooled cloud and mist from an aircraft, by A. I. Voskresenskii and V. G. Morachevskii (OTS or SLA $1.60, 61-28823)
##The SEM-1 aircraft electrical meteorograph, by A. A. Ledokhovich and V. A. Zaitsev (LC or SLA mi$1.80, ph$1.80, 61-13854)
##The LO-4 thermohygrometer, by A. I. Voskresenskii and A. A. Ledokhovich (LC or SLA mi$1.80, ph$1.80, 61-19035).

Golubov, R. S.
METHOD OF FORECASTING THE GEOPOTENTIAL FIELD OF THE 300 MB ISOBARIC SURFACE (Metod Prognoza Polya Geopotentsyala Izobaricheskoi Poverkhnosti 300 mb). 21 Sep 61 [28]p. 8 refs. JPRS: 10204.
Order from OTS or SLA $2.60 61-28402

Trans. of Kazakhskii Nauchno-Issledovatel'skii Gidrometeorologicheskii Institut. Trudy (USSR) 1960, v. 15, p. [11-26].

DESCRIPTORS: *Weather forecasting, Air, Motion, Wind, Temperature, Velocity, Humidity, Oscillations, Height finding, *Meteorological charts.

A simple method is proposed for precalculation 24 hours in advance of the 300 mb isobaric surface map, based on the indirect determination of the vertical movements according to changes in humidity-saturation level of air with altitude and on the determination of temperature advection by method of transfer. The possibility of precalculating wind velocity is analyzed. The verification of obtained results is borne out and examples are given in forecasts of altitude charts and wind velocity. (Author)

Kondrat'ev, K. Ya. and Gol'n, T. S.
SOME MEASUREMENT RESULTS OF THE THERMAL RADIATION OF THE ATMOSPHERE IN THE DAYTIME (Nekotorye Rezul'taty Izmerenii Teplovogo Izlucheniya Atmosfery v Dnevnoe Vremya) tr. by Richard M. Holden. June 61 [7]p. 4 refs. AmMetSoc-T-R-366+ AD-264 581.
Order from OTS or SLA $1.10 61-28828

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 11, p. 37-40.

DESCRIPTORS: *Atmosphere, *Thermal radiation, Radiometers, Measurement, Intensity, Water vapor, Instrumentation, Temperature, Infrared filters, Light transmission, Meteorological data, Germanium, Clouds, Humidity.

A previously described radiometer (Meteorologiya i Gidrologiya 1957: no. 7, 49-51; available in translation from OTS $0.50 as 59-11627) with the light filter in the form of a thin (0.8 or 0.4 mm) plate of crystal germanium was used for direct measurement of the daytime radiation. Observations were made during the summer of 1956 in the Elbrus region and during autumn in Koltushi, the Leningrad region. The angular distribution of the effective radiation intensity practically coincided with nighttime measurements. The angular distribution of the effective radiation intensity was well described by

$$\frac{f_\theta}{f_0} = \frac{0.25e - 0.1w_\infty \sec\theta + 0.11e - 0.5w_\infty \sec\theta}{0.25e - 0.1w_\infty \cdot 0.11e - 0.5w_\infty},$$

where f_θ and f_0 are the intensities of the effective radiation in the directions of the zenith angle θ and of the zenith, respectively, and w_∞ is the total water-vapor content in the vertical column of the atmosphere per unit cross section (1 sq cm). Daily observations at Koltushi during the spring of 1957 disproved the existence of a back-radiation minimum in the daytime.

List, Roland.
TO THE AERODYNAMICS OF HAIL STONES. [1961] 6p. (12 figs. 3 tables refs. omitted).
Order from SLA $1.10 61-20761

Summary trans. of Zeitschrift für Angewandte Mathematik und Physik (Switzerland) 1959, v. 10, no. 2, p. 143-159.

DESCRIPTORS: *Hail, Ice, Precipitation, Growth, *Aerodynamics, Falling bodies.

Sal'man, E. M.
METHOD OF RADAR INVESTIGATION OF THE STRUCTURE OF CUMULONIMBUS CLOUDS. 12 Sep 60 8p. (6 figs. omitted) 5 refs. [DSIR NLL] M. 2717;
Order from OTS or SLA $1.10 61-23298

Trans. of Glav[naya]Geof[izicheskaya]Obs[ervatoriya] Leningrad. T[rudy] (USSR) 1958, no. 82 [144] [p. 68ff.].

DESCRIPTORS: *Cumulus clouds, *Meteorological radar, *Radar echo areas, *Precipitation, Radar analysis, Weather forecasting, Storms.

The method gives a complete space-time picture of the echo from cumulonimbus clouds within the zone of coverage of the radar set.

Shekhtman, E. D.
ON THE PROBLEM OF FORECASTING THE PRESSURE FIELD AT HIGH ALTITUDES (K Voprosu o Prognoze Polya Davleniya na Bol'shykh Vysotakh). 25 Sep 61 [11]p. 6 refs. JPRS: 10215.
Order from OTS or SLA $1.60 61-28399

Trans. from Kazakhskii Nauchno-Issledovatel'skii Gidrometeorologicheskii Institut. Trudy (USSR) 1960, v. 15.

DESCRIPTORS: *Weather forecasting, Pressure, High altitude, Humidity, Thermodynamics, Temperature.

This article deals with the problem of forecasting the altitude of the 300-mb isobaric surface with the consideration of vertical currents. The feasibility of determining the magnitude of the vertical current variability, according to the humidity field, is based on thermodynamic methods. It is shown, that in 80% of cases the changes of AT_{300} altitudes are determined by the temperature advection in the 700-300 mb layer. (Author)

Voskresenskii, A. I. and Matveev, L. T.
THE WATER CONTENT AND TURBULENCE OF STRATIFORM CLOUDS IN THE ARCTIC. 19 Oct 61 [11]p. 11 refs. MCL-1400/1+2. AD-265 739
Order from OTS or SLA $1.60 61-20975

Unedited rough draft trans. of Meteorologiya i Gidrologiya (USSR) 1960, no. 11, p. 14-19.

DESCRIPTORS: Water, Turbulence, *Clouds, *Arctic regions, Measurement, Temperature, Meteorological data

An experimental study of stratiform clouds (particularly St and Sc) in the Arctic was made by means of flights on the Flying Laboratory of the Arctic and Antarctic Scientific-Research Institute, and on two specially organized expeditions. The equipment aboard the Flying Laboratory made possible quite accurate measurements of air temperature and humidity, atmospheric pressure, flight altitude and speed, dimensions of the cloud elements, the water content and optical density of the clouds, the overloads on the plane, and temperature micropulsations. Most observations were made in July-September, over ice-free regions of the Kara, Laptev, and East Siberian Seas. The water content of Sc exceeds 0.15 g/m^3 in 30.1% of the cases, while the water content of St exceeds this value in only 15.5% of the cases. The average water content of St is 0.10, and that of Sc is 0.14 g/m^3. The clouds in the Arctic generally have lower water content than those in the temperate latitudes. The water content increases with height, reaching its maximum at the top of the cloud. The coefficient of turbulence in Arctic clouds is lower than in temperate-latitude clouds, even in winter. In the clouds of the temperate latitudes, the maximum frequency of the coefficient of turbulence has higher values than outside the clouds. But in the Arctic,

where the measurements were made mainly in subinversion St and Sc, no essential difference was observed in the turbulent regime of clouds and outside them.

Frost Science

Komarov, V. D.
WATER PERMEABILITY OF FROZEN SAND (O Vodopronitsaemosti Merzlogo Peska) tr. by M. Corbin. Jan 61 [7]p. 5 refs. [CRREL] Trans. 66.
Order from OTS or SLA $1.10 61-19831

Trans. of [Akademiya Nauk SSSR. Institut Merzlotovedeniya]. Materialy po Laboratornym Issledovaniyam Merzlykh Gruntov, 1957, v. 3, p. 142-148.

DESCRIPTORS: *Water, *Permeability, *Sand, Soils, Moisture, Humidity, *Permafrost, Freezing, Ice, Penetration, Heat transfer.

Savarenskii, F. P.
DAMS IN PERMAFROST REGIONS (Plotiny v Raionakh Vechnoi Merzloty) tr. by Orest Popovych. June 60 [5]p. ACFEL Trans. no. 29; AD-238 978.
Order from OTS or SLA $1.10 62-13692

Trans. of mono. Savarenskii, F. P., Izbrannye Sochinenniya, Moscow/Leningrad, 1950, p. 370-371. Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-22387, DI-BRD-Trans-347, 4 Mar 59 [4]p.

DESCRIPTORS: *Dams, Permafrost, Melting, Arctic regions, Freezing, Water, Water supplies, Ice, Rock, Thermal stresses, Concrete, Fracture (Mechanics), Rupture

Water reservoirs constructed over permafrost disrupt the natural thermal regime in the river bed, especially in the vicinity of the dam. Heat is accumulated by the water and is transmitted to the ground, causing thaw and water seepage. Frequently an ice crust is formed below the dam and may cause freezing and cracking of the dam. Examples are cited of damage to dams because of these factors. (Author)

Geodesy

GRAVIMETRIC RESEARCH: [SELECTED ARTICLES]. [1961] [281]p. 120 refs. ACIC LD-46c
Order from OTS or SLA $18.00 62-15563

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1949, v. 68, p. 3-134.

DESCRIPTORS: *Geodesics, *Gravity, Gravity anomalies, Acceleration, Reduction, Earth, Configuration, Numerical analysis, Integral equations, Mountains, Geophysics

Contents:
Approximate equation solution method determining the figure of the quasigeoid, by M. S. Molodenskii
Reduction of gravity, by I. D. Zhongolovich
Determination of the earth's physical surface without reductions and condensations, by N. R. Malkin
Plumb-line deflection computation by the anomalies of the force of gravity in mountains, by N. R. Malkin
Behavior of pendulum knife edges and their role in absolute determinations of gravity acceleration, by G. S. Razdymakha
Regarding the determination of first-order gravimetric points, by J. D. Boulanger

Bagratuni, G. V.
INSTRUCTION AND TABLES FOR THE SOLUTION OF THE DIRECT AND INVERSE PROBLEMS OF GEODESY AT SIGNIFICANT DISTANCES BY FORMULAE OF A. M. VIROVETS. [1961] [59]p. 1 ref. ACIC LD-46a.
Order from OTS or SLA $5.60 62-15564

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1952, v. 93, p. 5-50.

DESCRIPTORS: *Geodesics, Instruction manuals, Tables.

Bonch-Bruevich, M. D. and Kazanskii, I. A., eds.
GEODESY REFERENCE MANUAL, VOL. I: PHYSICAL GEODESY. [1961] [1, 447]p. 648 refs. ACIC G8.
Order from OTS or SLA $48.50 62-15517

Trans. of mono. Geodeziya, Spravochnoe Rukovodstvo, v. 1, Leningrad/Moscow, 1949, 422p.

DESCRIPTORS: *Geodesics, *Handbooks, Earth, Configuration, Ellipsoids, Deflection, Surface area, Gravity, Geophysical prospecting, Measurement, Errors, Least squares method

Contents:
General information, by M. D. Bonch-Bruevich and others
Figure of the earth, by P. M. Gorshkov
The terrestrial spheroid, by P. M. Gorshkov and N. N. Stepanov
Deflections of the plumb line, by N. I. Idelson and N. Malkin
Level surface, by P. M. Gorshkov
The horizon, by M. K. Ventsel
The sea level, by A. S. Maksimov
Gravimetry, by L. V. Sorokin
Isostasy, by E. A. Mudretsova and L. V. Sorokin
Gravimetric prospecting, by L. V. Sorokin
Errors in measurement, by P. I. Shilov
Compensation of errors, method of least squares, by P. I. Shilov

Bonch-Bruevich, M. D., ed.
TRIGONOMETRIC (BASAL) TRAVERSE. [1961] [55]p. ACIC G-18.
Order from OTS or SLA $5.60 61-28841

Trans. of Geodeziya: Spravochnoe Rukovodstvo (USSR) 1949, v. 9, chap. 2, sec. D-2, p. 133-153.

DESCRIPTORS: *Geodesics, Geophysical prospecting, Trigonometry, Geodetic data, Processing.

Deineko, V. F.
AERIAL PHOTOGEODESY. 29 Jan 62 [619]p. 34 refs. ACIC G-1.
Order from OTS or SLA $28.50 62-15568

Trans. of mono. Aerofotogedeziya, Moscow, 1957, 340p.

DESCRIPTORS: *Aerial photography, Photography, Mapping, *Geodesics, Aerial reconnaissance, Aerial photographs, Photographs, Rectifiers (Photography), Maps, Projective geometry, Geometry, Stereoscopes, Textbooks.

Contents:
Fundamentals of photography
Basic information on aerial photographic surveying
Fundamentals of perspective theory
Aerial photographs and photogrammetry
Uncontrolled and semicontrolled mosaics
Fundamentals of projective geometry
Rectification
Controlled mosaics
Aerotriangulation
Orientation of aerial photographs
Interpretation
Compilation of planimetric outline maps by means of the controlled photo mosaic
Combined aerial survey
Stereoscopic aerial photography.

Entin, I. I.
HIGH PRECISION LEVELING. [1961] [530]p. 41 refs. ACIC LD-43.
Order from OTS or SLA $26.00 62-15572

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1956, v. 111, 339p.

DESCRIPTORS: *Geodesics, Geophysical prospecting, Instrumentation, Errors, Refraction, Temperature, Rods, Illumination

Contents:
The purpose and construction of a high precision leveling net
Selection of observation methods and study of observation errors
Study of the refraction effect
Study of the effect of vertical displacement of turning points and tripods
Study of temperature effects on a level instrument
Unequal illumination of rods and some other sources of errors
Accuracy of first-order leveling
New observation method in first-order leveling

Gerasimov, I. D. and Filippov, Yu. V.
RECENT VERTICAL MOVEMENTS OF THE EARTH'S CRUST IN THE TERRITORY OF THE WESTERN EUROPEAN USSR. [1961] [588]p. 103 refs. ACIC LD-42.
Order from OTS or SLA $26.00 62-15571

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1958, v. 123 [294]p.

DESCRIPTORS: *Earth, Surface area, Surface properties, Motion, Earthquakes, *Geodesics, Oceanography, Geology, Deformation, Velocity, Catalogs, Geodetic data

This work is the first experiment in the complex study of recent vertical movements of the Earth's crust, using geodetic, oceanographic, and geologic-geomorphic methods. The work has been performed by the Central Scientific Research Institute of Geodesy, Aerial Surveying, and Cartography, and the Institute of Geography of the Academy of Sciences of the USSR. (Author)

Sinyagina, V. I. and Pellinen, L. P.
ANALYSIS OF THE RESULTS OF FIRST-ORDER LEVELING IN THE SOVIET UNION [AND] INVESTIGATION OF TRIANGULATION ANGLE MEASUREMENTS. [1961] [192]p. 30 refs. ACIC LD-46b.
Order from OTS or SLA $13.50 62-15518

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros"emki i Kartografii. Trudy (USSR) 1957, v. 114, p. 17-125.

DESCRIPTORS: *Geodesics, Geophysical surveying, Geodetic data, Analysis, Trigonometry

Smirnov, K.
COEFFICIENT OF EXPANSION OF INVAR TAPES. Review of German language article by K. Lüdemann. 9 June 61 [6]p. 7 refs. JPRS: R-110-N/33.
Order from OTS or SLA $1.10 61-23098

Trans. of Geodezist (USSR) 1932 [v. 8] no. 5, p. 40-42 (based on material originally pub. in Austrian Journal of Surveying [sic] 1931, no. 6).

DESCRIPTORS: Geophysical prospecting, *Geodesics, Measurement, Instrumentation, Nickel, Steel, Elasticity, Numerical analysis.

Veselovskii, N. N.
AERIAL PHOTOGRAPHY. 29 Jan 62 [617]p. 52 refs. ACIC G-3.
Order from OTS or SLA $28.50 62-15567

Trans. of mono. Aerofototopografiya, Moscow, 1958, 347p.

DESCRIPTORS: *Aerial photography, Photography, Aerial reconnaissance, Aerial photographs, Rectifiers (Photography), Mapping, Phototheodolites, Theodolites, Photographs.

Contents:
Fundamentals of aerial photography
Fundamentals of linear persepctive
Analysis of an aerial photograph
Rectification of photographs
Photographic interpretation
Topographic survey
Basic principles of stereophotogrammetric aerial survey and fundamentals of the divided-phases method
The stereometers of Professor F. V. Drobyshev
The integral method of aerial survey
Photogrammetric methods of bridging; vertical bridging and horizontal bridging
Compilation and revision of maps by means of aerial-survey methods
General concepts of phototheodolite survey
The use of aerial surveying in the different sectors of the national economy.

Geography

AN ACCOUNT OF OBSERVATIONS CARRIED OUT BY THE SOVIET ANTARCTIC EXPEDITION. [1961] [44]p. (10 figs. omitted).
Order from OTS or SLA $4.60 61-27414

Trans. of Sovetskaya Antarkticheskaya Ekspeditsiya. [Informatsionnyi] Byulleten', 1960, no. 15.

DESCRIPTORS: *Antarctic regions, Exploration, Tables, Meteorology, Terrestrial magnetism, Ionosphere, Cosmic rays, Geology, Biology, Hydrology, Medical research, Aerial photograpny.

The account covers 1957 and 1958, i.e., the entire period of the International Geophysical Year activities and a part of the preparatory phase.

Rogov, M. M.
HYDROLOGY OF THE DELTA OF THE AMU-DAR'YA RIVER: SELECTED PARTS, tr. by Ivan Mittin. 1961 [121]p.
Order from OTS or SLA $10.10 62-13105

Trans. of mono. Gidrologiya Del'ty Amu-Dar'i, Leningrad, 1957, p. 25-30, 62-78, 119-131, 183-195, 231-238.

DESCRIPTORS: *Deltas, *Hydrology, *Inland waterways, Geography, Geology, Sedimentation.

Contents:
Table of contents of the whole book
Translator's note
Chap. II. Physical-geographic characteristics of the delta
1. Geographical location and boundaries of the delta
4. Geology and geomorphology
A. Principal features of geologic structure of the lower reaches of the Amu-Dar'ya River
B. Brief history of geologic development of the Amu-Dar'ya delta plain
C. Geology and geomorphology of the present day delta
Chap. III. Hydrologic regime of the delta
3. Sediment flow
Chap. V. Dynamics of the hydrographical network of delta
1. Formation, development, and disappearance of river branches and channels
4. Some patterns in the development of the hydrographical net work.
(See also 61-23201)

Geology

BULLETIN OF THE MOSCOW SOCIETY FOR NATURAL RESEARCH. GEOLOGICAL SECTION, 1956, VOL. 31(61) NO. 1-3. 1961, 444p. refs.
PL-480 Int.
Order from OTS $4.50 61-11402/1-3

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Geologicheskii (USSR) 1956, v. 31(61) no. 1, 2, 3.

DESCRIPTORS: *Geology, Periodicals, History, Hydrology, Soils, Crustacea, Ecology, Sulfur, Deposits, Geological time, Determination, Anthracenes, Microstructure, Sedimentation, Dolomite, Paleoecology, Geography, Earth, Surface area, Rock, Calcite, Clays, Minerals, Plants.

GEOHYDROLOGY AND ENGINEERING GEOLOGY (IN COMMUNIST CHINA) 1959, NO. 7: SELECTED ARTICLES. 2 Oct 61 [71]p. JPRS: 8987
Order from OTS or SLA $7.60 61-28563

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 7, p. 1-8 and 13-41.

DESCRIPTORS: *Hydrology, Water, China, *Geology, Geophysical prospecting, Geophysics, Conferences, Classification, Minerals, Deposits, Dams, Civil engineering, Production, Management engineering, Coal, Mining engineering, Shafts, Permafrost.

Contents:
Summary of the Second National Conference on Geohydrology and Engineering Geology of the Ministry of Geology (no. 2), by Ho Ch'ang-kung
Classification and distribution of artesian basins in China, by Ch'en Meng-hsiung and others
Initial proposals and geohydrological classification principles of hard mineral deposits, by Wang Jui-teng
Preliminary compilation of a general engineering geology map for China (1:4,000,000) by Chiang Ta-ch'uan and others
Principles of regional classification for engineering geology, by Liu Kao-ch'ang
Type-division of Chinese dam bases for engineering geology, by Hu Hai-t'ao and others
Some experiences in handling mass activities to strengthen production management in the big leap forward

The geohydrological division of the Ho Hsi corridor of (Kansu Province) by Fang Hung-ts'u
Geotechnical conditions of the San Men Hsia conservation project (summary) by Chia Fu-hai
Geohydrological conditions of the Kuan Chung district, by Chao Li-tien
Geohydrology of the Chiao Tso coal field and geohydrological conditions of the mine shafts, by Sun Wen-yu and Ting Chin-kuai
Geohydrological conditions and work methods for the San Ho Permafrost Region (summary) by Chang Chin-k'uei and Peng Yen-ling.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1940, VOL. 28, NO. 1: [TABLE OF CONTENTS] AND SELECTED ABSTRACT. [1961] 2p.
Order from OTS or SLA $1.10 61-20389

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1940, v. 28, no. 1, p. 49-54.

DESCRIPTORS: Scientific reports, USSR, *Petroleum, Geophysical prospecting, Geology.

Contents:
Prognosis of oil deposits, by S. F. Fedorov.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1942, VOL. 36, NO. 6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 2p.
Order from OTS or SLA $1.10 61-20310

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) l'Academie des Sciences de l'U.R.S.S., 1942, v. 36, no. 6, p. 171-174 and 182-184.

DESCRIPTORS: Reports, Abstracting, Scientific research, *Palladium compounds, *Carbon compounds, *Monoxides, *Oils, Gases, Rock, Earth, Sources, Phase studies, Transformations, Nickel, Cobalt, Manganese, Ores.

Contents:
Compounds of palladium with carbon monoxide, by A. Gelman and E. Meilakh
Occurrence of oil as related to gravitational anomalies, by L. V. Khmelevskaya.

Anan'ev, A. R.
INVESTIGATION OF THE MIDDLE DEVONIAN FLORA OF THE SAYANO-ALTAI MOUNTAINOUS PROVINCE. 8 May 61, 33p. (7 figs. 4 tables omitted) 14 refs.
Order from OTS or SLA $3.60 61-15878

Trans. from Botanicheskii Zhurnal (USSR) 1960, v. 45, no. 5.

DESCRIPTORS: *Plants, *Paleoecology, *Geology, Deposits, Mountains, Rock.

A study of several collections of fossil plants indicated that the Middle Devonian complex of plants established in the region of the Sayano-Altai mountainous province fully corresponds in its stratigrafic position, composition and standard of development to the Hyenian (Protopteridian) flora established in Western Europe.

Since the Hyenian (Protopteridian) flora appears in Western Europe and Kazakhstan from the lowest parts of the Middle Devonian, a Middle Devonian age should not be ascribed to those deposits in the Sayano-Altai province (the Torgashino, Matarak-Shunet, Tustuchzhul a. o.) which contain a psylophytic (not a Hyenian) flora. An assumption expressed earlier by some writers about the existence in the Middle Devonian of the representatives of the Zygopteridales is confirmed. An idea is expressed that that group of the Primofilices originated from the psilophytes in the Lower Devonian or somewhat earlier (in the Silurian?). The existence of a transitional flora at the boundary between the Lower and Middle Devonian is denied. The psilophytic flora of the Lower Devonian was replaced by the Hyenian (Protopteridian) flora of the Middle Devonian directly by means of a quick, spasmodic disappearance of the psilophytes; these new elements of the Hyenian flora which had already appeared within the early psilophytic flora moved to the foreground.

Bugelskii, Yu. Yu.
THE MIGRATION OF ORE-COMPONENTS IN THE UNDERGROUND WATERS OF THE COMPOUND METAL DEPOSITS IN THE EASTERN TRANSBAIKAL REGION. [1961] 11p. (2 figs. 2 tables omitted).
Order from OTS or SLA $1.60 61-23963

Trans. from mono. [Materialy po Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii] (Materials on the Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry) [Moscow, 1959, 424p.].

DESCRIPTORS: *Ores, *Hydrology, Water, Metals, Deposits, Precipitation, Permafrost, Geochemistry, Geophysical prospecting, Minerals, Rock, Mining engineering, Chemical analysis.

Bugelskii, Yu.
THE USE OF HYDROGEOCHEMICAL METHODS IN PROSPECTING FOR BERYLLIUM. [1961] 6p. (2 tables omitted).
Order from OTS or SLA $1.10 61-23969

Trans. from mono. [Materialy po Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii] (Materials on the Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry) [Moscow, 1959, 424p.].

DESCRIPTORS: *Beryllium, Geophysical prospecting, Geochemistry, Minerals, Ores, Deposits, Fluorspar, Hydrology.

Because of the close paragenesis of the beryllium minerals with fluorite minerals it can be assumed that

in all the other cases around the beryllium deposits (in the event of the presence of helvin as the most readily oxidizing mineral) there will be formed an equeus aureole with a stable anomalous content of beryllium. The discovery of it and the mapping of it by means of an hydrogeochemical sampling of the sources or springs of brooks and of a various kind of workings can serve as an indication of the presence of a beryllium deposit. (Extract)

Chibrikova, E. V. and Rozhdestvenskaya, A. A.
SPORES FROM THE DEVONIAN AND OLDER DEPOSITS OF BASHKIRYA. [1961] 210p. (illus. omitted) 61 refs.
Order from OTS or SLA $14.00 61-19929

Partial trans. of mono. Data on the Palaeontology and Stratigraphy of Devonian and Older Deposits of Bashkirya, Moscow, 1959.

DESCRIPTORS: *Paleoecology, Geology, Deposits, *Spores, USSR.

This work is a result of the three-year research (1953-1955) carried out by the Institute of Mines and Geology of the Bashkirian branch of the Academy of Sciences of the USSR. (Extract)

Egor'eva, A. V. and Utkin, I. A.
PROBLEMS IN INVESTIGATION OF MINERAL RESOURCES UNDER THE BOTTOMS OF SEAS AND OCEANS. 14 Sep 61 [15]p. JPRS: 8874.
Order from OTS or SLA $1.60 61-28881

Trans. of Razvedka i Okhrana Nebr (USSR) 1960 [v. 26] no. 11, p. 6-10.

Portions of this report will not reproduce well.

DESCRIPTORS: *Minerals, Sources, Ocean bottom, *Geophysical prospecting, Geology.

Ishchenko, T. A.
DISCOVERY OF A MIDDLE DEVONIAN FLORA ON THE SOUTH BOUNDARY OF DONETZ BASIN. [1961] 5p.
Order from OTS or SLA $1.10 61-23208

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 137, no. 3, p. 660-662.

DESCRIPTORS: *Geological survey, *Plants, Paleoecology, Animals, Geological time.

Besides the Upper Devonian archaeopterid flora, there was also developed on the south of Donbass the Middle Devonian psilophyte flora. It is characterized by a varied species composition which includes psilophytes, sphanopsids, lycopods, and ferns. The Middle Devonian flora of southern Donbass exhibits in its species composition and habitat conditions a complete similarity with the known flora of the Middle Devonian of western Germany. The variety of species composition and the abundance of single individuals, as well as the presence of remnants of a brachiopod fauna, give evidence for the existence of this flora under conditions of increased humidity which followed the arid conditions of Lower Devonian. (Author)

Kalita, E. D.
THE PROBLEM OF THE DISPERSION-AUREOLES OF LITHIUM, RUBIDIUM AND BERYLLIUM. [1961] 7p. (3 figs. 1 table omitted).
Order from OTS or SLA $1.10 61-23970

Trans. from mono. [Materialy po Geologii Rudnykh Mestrozhdenii, Petrografii, Mineralogii i Geokhimii] (Materials on the Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry) [Moscow, 1959, 424p.].

DESCRIPTORS: *Lithium, *Rubidium, *Beryllium, Rock, Rare earth elements, Geophysical prospecting, Geochemistry, Ores, Deposits, Minerals, Pegmatites.

Near the lithium, cesium pegmatite the host rocks are enriched with lithium and rubidium by the formation of dispersion-aureoles, the contours of the distribution of the rare elements that migrate from pegmatite veins. Lithium and rubidium, which are the most mobile, migrate from the primeval source for scores of meters; beryllium, however, has a rather insignificant migratory capacity. The highest content of lithium and rubidium is observed in amphibolites at the immediate contacts with the pegmatite body. Farther away from the contacts their content in the amphibolites, at first, drops radically and then decreases gradually until it reaches zero. The increased content of lithium and rubidium in amphibolites, which can be determined by a metallometric survey, points to the presence of lithium pegmatites close by or at a small depth. By this method it is possible to discover blind veins. (Author)

Kashevarova, N. P.
GEOLOGY AND OIL [OCCURRENCES] OF THE TIMAN-PECHORA REGION: [ON] THE STRATIGRAPHY OF UPPER PERMIAN [DEPOSITS] OF THE SOUTHERN TIMAN, PT. 1. 26 May 61, 38p.
Order from OTS or SLA $3.60 61-23967

Trans. of [Vsesoyuznyi Neftyanoi Nauchno-Issledovatel'skii Geologo-Razvedochnyi Institut]. Trudy (USSR) 1959 [no. 133, p. 233-256].

DESCRIPTORS: *Geology, *Oils, Sedimentation, Aquatic animals, Crustacea, Marine biology, Age, Paleoecology, Shellfish.

Kashevarova, N. P.
GEOLOGY AND OIL OCCURRENCES OF [THE] TIMAN-PECHORA REGION: ON THE STRATIGRAPHY OF UPPER PERMIAN DEPOSITS OF SOUTHERN TIMAN, PT. 2: DESCRIPTION OF SPECIES, tr. by C. de Leuchtenberg, 28 Mar 61 [21]p. (17 figs. omitted) 27 refs.
Order from OTS or SLA $2.60 61-23966

Trans. of [Vsesoyuznyi Neftyanoi Nauchno-Issledovatel'skii Geologo-Razvedochnyi Institut. Trudy] (USSR) 1959, no. 133, p. 257-271.

DESCRIPTORS: *Geology, *Oils, Crustacea, Aquatic animals, Marine biology, Paleoecology, Shellfish, Age.

See also 61-23967

Lin, Feng-t'ung.
EXPERIENCES IN SEARCHING FOR UNDERGROUND WATER IN THE PERMAFROST AREAS OF TA-HSIAO HSING-AN RIDGE. 28 Sep 61 [14]p. JPRS: 10298.
Order from OTS or SLA $1.60 61-28855

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 6, p. 37-40.

DESCRIPTORS: *Permafrost, *Hydrology, *Geology, China, Geophysical prospecting.

Lyubimova, P. S., Kazmina, T. A., and Reshetnikova, M. A.
THE OSTRACODES OF THE MESOZOIC AND CENOZOIC SEDIMENTS OF THE WEST SIBERIAN LOWLAND. 16 Oct 61, 54p. (figs. tables omitted).
Order from OTS or SLA $5.60 61-28793

Trans. from [Vsesoyuznyi Neftyanoi Nauchno-Issledovatel'skii Geologo-Razvedochnyi Institut. Trudy] (USSR) 1960, no. 160.

DESCRIPTORS: Siberia, *Crustacea, *Aquatic animals, *Shellfish, *Marine biology, Paleoecology, Sedimentation.

Mandelshtam, M. I.
OSTRACODA FROM THE MIDDLE JURASSIC DEPOSITS OF THE MANGYSHLAK PENINSULA. [1961] 31p. (2 tables omitted) 10 refs.
Order from OTS or SLA $3.60 61-23964

Partial trans. of mono. Microfauna of the Oil Fields of the Caucasus, Emba and Central Asia, Leningrad/Moscow, 1947.

DESCRIPTORS: *Crustacea, Deposits Geology, USSR.

Descriptions of ostracods of the new genera Palaeocytheridea, Archeocuneocythere and of the genus Aequacytheridea from the marine Middle Jurassic of Mangyshlak, are presented. Furthermore, ostracods of the new genus Timiriasevia found in association with different species of the genera Prothocythere and Darwinula in the carboniferous suite of the Middle Jurassic, are described. (Author)

Mogilevskii, G. A.
EXPERIENCE FROM GASOBIOCHEMICAL SURVEY OF WATERS DURING SEARCHES FOR OIL AND GAS DEPOSITS. [1961] 21p. 15 refs.
Order from OTS or SLA $2.60 61-18583

Trans. of Sovetskaya Geologia (USSR) 1958, no. 11, p. 111-130.

DESCRIPTORS: Petroleum industry, Hydrocarbons, *Gases, *Oils, *Hydrology, *Biochemistry, Bacteria, Propanes, Geochemistry, Geophysical prospecting, Deposits.

The efficiency of the water gasbiochemical survey technique is about 70%. Gas bacterium analysis of ground water, especially for bacteria oxidizing propane, and heavy hydrocarbon contents should be carried out regardless of geology-geochemical prospectings; and all water holes in new exploration districts should be sampled. (Author)

Pospelova, G. A.
RESIDUAL MAGNETIZATION OF TERTIARY AND QUARTERNARY IGNEOUS ROCKS. [1961] [14]p. (8 figs. omitted) 7 refs.
Order from OTS or SLA $1.60 61-15961

Trans. from #[Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya] 1959, no. 11 [p. 1591-1598].

DESCRIPTORS: *Rock, Magnetic fields, Earth, Age factors, Geological time, *Terrestrial magnetism, Paleoecology, Geophysics.

Investigated was the residual magnetization of the Quarternary and Tertiary lavas of Armenia, the Kuril Islands, and Kamchatka. It was established that the Quarternary rocks are normally magnetized, while the rocks close in age to the boundary of the Quarternary period and Pliocene are magnetized reversely. This corresponds to the assumption of the reversals of the magnetic field of the Earth. The pole positions corresponding to the formation period of these rocks were calculated; the results obtained show a good coincidence with the data of other researchers. On the basis of the data obtained, the age of some of the rocks was made more precise. (Author)

Rozhdestvenskii, A. K.
FIELD RESEARCH BY THE SINO-SOVIET PALEONTOLOGICAL EXPEDITION OF THE ACADEMY OF SCIENCES USSR AND THE ACADEMY OF SCIENCES CHINA DURING 1960. 25 Sep 61 [10]p. 1 ref. JPRS: 10236.
Order from OTS or SLA $1.10 61-28606

Trans. of Paleontologicheskii Zhurnal (USSR) 1961, no. 1, p. 170-174.
Another trans. is available from OTS or SLA $1.10 as 61-27100, JPRS-8513, 29 June 61 [10]p.

DESCRIPTORS: USSR, China, *Paleoecology, Scientific research.

For abstract see Technical Translations 6: 503, 1961.

Ukanov, K. M.
SEVERAL PECULIARITIES IN THE FORMATION OF THE PRIMARY AUREOLES OF THE DISPERSION OF ORE DEPOSITS. [1961] 11p. (1 table omitted).
Order from OTS or SLA $1.60 61-23962

Trans. from mono. [Materialy po Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii] (Materials on the Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry) [Moscow, 1959, 424p.].

DESCRIPTORS: *Ores, Deposits, Geochemistry, Rock, Geophysical prospecting, Minerals, Transformations, Heavy elements, Separation, Rare earth elements, Porosity, *Diffusion, Density.

Vinogradov, V. I.
PROBLEMS OF THE HYDROCHEMISTRY OF MOLYBDENUM. [1961] 26p. (2 illus. 3 tables omitted).
Order from OTS or SLA $2.60 61-23971

Trans. from mono. [Materialy po Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii] (Materials on the Geology of Ore Deposits, Petrography, Mineralogy, and Geochemistry) [Moscow, 1959, 424p.].

DESCRIPTORS: *Molybdenum, Precipitation, Minerals, Water, Chemical analysis, Sulfides, Oxidation, Oxygen, Penetration, Deposits, Ores, Minerals, Geochemistry, Geophysical prospecting, Hydrology.

Molybdenum migrates intensely in the supergenesis zone. A good migration of molybdenum depends upon the solubility of its natural compounds or combinations in the waters of different chemical compositions and practically at all the pH values that are possible. The precipitation of secondary molybdic minerals takes place from sufficiently concentrated solutions and the residual concentration of molybdenum in a solution after the deposition of the secondary minerals is considerable. The enrichment of the natural waters with molybdenum occurs also at the cost of the dissolving of earlier deposited secondary molybdenic minerals, of which wulfenite is the one that binds or combines molybdenum most firmly. The relative sluggishness of the oxidation of molybdenite and the general small amount of sulfides in molybdic deposits make it possible for the oxygen-containing waters to penetrate deeply and to cause a deep oxidation of the deposit. This leads to the formation of aqueous aureoles of the dispersion of molybdenum around the deposits, where this element occurs in the form of a primary sulfide or of the secondary minerals and opens the way for the use of the hydrogeochemical methods. (Author)

Vostokova, E. A., Vyshivkin, D. D. and others.
GEOBOTANIC INDICATORS FOR BITUMINOSITY. [1961] [25]p. 9 refs.
Order from OTS or SLA $2.60 61-20232

Trans. from Vsesoyuz[nyi] Aerogeol[ogicheskii] Trest. Trudy (USSR) 1955, v. 1.

DESCRIPTORS: *Bitumens, *Geophysical prospecting, *Plants, Geology, Soils, Petroleum.

A comparative investigation was made of the vegetation of standard plots (which contained bitumen in the soil) and of control plots without bitumen. The geobotanical characteristics of bitumenosity were thereby established. Plots had areas of 250 to 5000 m^2 each. The presence of bitumen in the soil was established by special analyses. The samples for analysis were taken from the soil layer around the roots and also from the basement rocks. The analyses were made by the luminiscence method and by the extraction method with a Soxhlet apparatus. The control plots were chosen under the same ecological conditions as for the standard plots. Special attention was paid to strongly effective factors, such as the level of the investigated plot and the hydrogeological conditions connected with it, the salt conditions of the soil, the lithologic composition of the substratum and the size of the deluvial deposits as well as the type of the flora. In addition to the accurate description of the vegetation on each of the plots, all species composing it were investigated in detail, and mass measurements were effected (from 25-100 measurements for each species of plant on the plot) concerning the height and "diameter" of the plants. ("Diameter" means here the distance between the ends of two most distant opposite branches.)

Mineralogy

Parfenova, E. I.
A STUDY OF THE MINERALS OF PODZOLIC SOILS WITH REGARD TO THEIR FORMATION PROCESS (Issledovanie Mineralov Podzolistykh Pochv v Svyazi s Ikh Genezisom). [1960] 19p. 17 refs. PL-480 Agr.
Order from OTS $0.50 60-21836

Trans. of Kora Vyvetrivaniya (USSR) 1956, v. 2 [no. 2] p. 31-34.

DESCRIPTORS: *Minerals, *Soils, Chemical analysis, Trees, Quartz, Clays, Iron, Peat, Plants, Crystallization, Spectrographic analysis, Aluminum, Distribution, Geology.

A mineralogical analysis was made of a loamy podzol, distinguished by a fine powdered (farinaceous) structure in the podzolic horizon and by a distinctly expressed bright-brown illuvial horizon, samples of which were supplied from the village of Ostankino in the Moscow region. The soil is found on the upper plain part of a plateau, beneath a secondary birch park forest with a dense grass cover. Results showed that in the formation of the podzolic horizon of the loamy-podzol soils secondary quartz constitutes the most significant factor. In the illuvial horizon of the podzols specific soil clay minerals are being synthesized. Mineralogical, chemical, X-ray and thermal analyses, proved that these minerals belong to the iron beidellite (montmorillonite) group. The clay minerals of the illuvial horizon are, according to Polynov's assumptions of a biogenic origin.

Yarilova, E. A.
A MINERALOGICAL STUDY OF THE SUB-ALPINE CHERNOZEM DEVELOPED ON ANDESITE BASALT. (ARMENTIA) (Meneralogicheskoe Issledovanie Subal'piiskogo Chernozema na Andezito-Bazal'te). 1961, 21p. 24 refs. PL-480 Agr.
Order from OTS $0.50 60-21837

Trans. of Kora Vyvetrivaniya (USSR) 1956 [v. 2] no. 2, p. 45-60.

DESCRIPTORS: *Rock, Decomposition, *Soils, *Minerals, Biochemistry, Volcanoes, Glass, Deposits, Plants, Clays, Microorganisms, Geology, Earth, *Marble.

The formation of chernozem on top of the andesite basalt of the foothills of the Akhmangan Plateau in sub-Alpine conditions leads to the intensive decomposition of the rock material. This is why only 1% of fresh fragments and 5% of considerably altered rock fragments remain in the fine earth mass of the upper

horizon of the soil. The minerals of the andesite basalt undergo mechanical disintegration as well as biochemical decomposition. The latter is particularly true of volcanic glass, which disappears almost completely in the upper horizon of the soil. In the process of chernozem formation new mineral deposits are created. These new deposits included bioliths (minerals which are formed inside plants and which enter the soil after withering of the latter), and the synthetic clay mineral, the formation of which is directly connected with the activities of soil organisms. The clay mineral appears at the earliest stages of soil formation. These stages are controlled by lithophyle lichens on the andesite basalt, an influence which consists of the formation of thin coatings around the edges of the rock pores. Optical and X-ray analyses and a thermal analysis of the $< 1\mu$ soil fractions, which consist almost entirely of the mineral, indicate, that it corresponds to iron-beidellite. (Author)

Yurk, Yu. Yu.
HYDRATION OF IRON OXIDES AND THEIR CONVERSION TO HYDROXIDES. [1961] 8p. (3 figs. omitted) 7 refs.
Order from OTS or SLA $1.10 61-15875

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1956, v. 109, no. 1, p. 144ff.

DESCRIPTORS: *Iron compounds, *Oxides, *Hydroxides, Minerals, Magnetite, Iron, Ores, Rock, Crystals, Lattices, Geology, Mining engineering.

Physics of the Atmosphere

Krasovskii, V. I.
SOVIET INVESTIGATIONS OF THE IONOSPHERE WITH THE AID OF ROCKETS AND ARTIFICIAL EARTH SATELLITES. [1961][37] p. (15 figs. omitted) 16 refs.
Available on loan from SLA 62-14011

[Rough draft] trans. of [Iskusstvennye Sputniki Zemli (USSR) 1958, v. 2, p. 36-49].
Another trans. is available from OTS or SLA $2.60 as 61-19570, ARGMA Trans-10-61, 15 Dec 60 [22]p.

DESCRIPTORS: *Ionosphere, *Satellite vehicle research, *Rocket research, Electrons, Density, Extraterrestrial radio waves, *Radio waves, Transmission, Reflection, Atmospheric sounding.

For abstract see Technical Translations 6: 659, 1961.

Kurt, V. G.
DETERMINATION OF THE DENSITY OF THE CENTRAL COMPONENT IN THE IONOSPHERE (Opredelenie Plotnosti Tsentral'noi Komponenty v Ionosfere) tr. by Richard M. Holden. June 61 [5]p. 3 refs. AmMetSoc-T-R-361+. AD-264 578
Order from OTS or SLA $1.10 61-28826

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1959, v. 2, no. 6, p. 1007-1009.

DESCRIPTORS: Atmosphere, *Density, Gravity, Sodium, Vapors, Diffusion, *Ionosphere.

Sodium vapors were released at 430 km above the earth's surface to determine atmospheric density according to the method of Shklovskiy and Kurt (Iskusstvennyye Sputniki Zemli 3: 66-76, 1959; available in translation from OTS $0.50 as 60-21443). Methods are shown for accounting for the effects of the inhomogeneity of the ionosphere and of gravity. Results are plotted of recent determinations of atmospheric density between 200 and 800 km.

Shekhtman, E. D.
THE EFFECT OF THE SOUTH-EAST KAZAKHSTAN MOUNTAIN MASSIFS UPON THE DYNAMICS AT ATMOSPHERIC PROCESSES (Vliyanie Gornykh Massivov Yugo-Vostochnogo Kazakhstana na Dinamiku Atmosfernykh Protsessov). 25 Sep 61 [17]p. 18 refs. JPRS: 10210.
Order from OTS or SLA $1.60 61-28400

Trans. of Kazakhskii Nauchno-Issledovatel'skii Gidrometeorologicheskii Institut. Trudy (USSR) 1960, v. 15, no. 32-40.

DESCRIPTORS: *Mountains, *Dynamics *Atmosphere, Hydrodynamics, Turbulence, Viscosity, Earth, Surface properties, Precipitation.

The effect of mountains on the dynamics of atmospheric processes is shown on a hydrodynamic basis, with the consideration of turbulent viscosity. Tables of weighting coefficients are given for the calculation of vertical currents affected by unevenness of the earth surface. It is shown, that the increase of the amount of precipitation in the foothills of Kazakstan is tied to the fact, that the atmosphere appears to be a viscous medium. (Author)

Zuev, V. E.
INTEGRAL FUNCTIONS OF THE ABSORPTION OF LONG-WAVE RADIATION IN THE ATMOSPHERE. 4 Oct 61 [14]p. 9 refs. FTD-TT-61-39. AD-265 802
Order from OTS or SLA $1.60 61-28971

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1961, no. 3, p. 28-34.

DESCRIPTORS: *Atmosphere, *Water vapor, *Carbon dioxide, Absorption, Temperature, Pressure, Heat transfer, *Infrared radiation, Infrared spectroscopy, *Functions, Determination.

On the basis of the analysis of the results of laboratory measurements on the absorption of water vapor and CO_2 in individual bands, a method is proposed for the calculation of the integral functions of the absorption of long-wave radiation by water vapor or carbon dioxide in the horizontal layers of the atmosphere. (Author)

Boyuchuk, O. P. and Temchenko, M. E.
A METHOD OF ELIMINATING BALLISTIC DEVIATIONS IN A THREE-AXIS GYROSCOPIC STABILIZER. 14 Aug 61 [17]p. 4 refs. JPRS: 4866.
Order from OTS or SLA $1.60 61-27927

Trans. of Avtomatyka (USSR) 1961, no. 2, p. 44-52.

DESCRIPTORS: *Gyro stabilizers, Motion, Corrections, Inertia.

We consider a schematic diagram for a three-axis gyroscopic stabilizer in which the ballistic deviations which arise from maneuvering of the base are eliminated to the necessary accuracy. (Author)

Neyman, B.
THE LOCATION OF ROCK BURSTS IN THE COAL MINES OF THE UPPER SILESIAN COAL BASIN (Rejonizacja Tapan w Kopalniach Wegla Gornoslaskiego Zaglebia Weglowego) tr. by Janina Lutoslawska. 1961, 12p. 19 refs. PL-480 Int.
Order from OTS $0.50 60-21305

Trans. of Archiwum Gornictwa (Poland) [1957] v. 2 [no. 4] p. 249-265.

DESCRIPTORS: *Coal, *Mines, Geology, *Rock, Fracture (Mechanics), Stresses, Pressure.

Solov'ev, P. M.
THE REASONS FOR THE ACCIDENT AT THE "KLYUCHI" MINE, tr. by L. Meyer. [1961] [5]p. S. M. R. E. Trans. no. 4417; DSIR NLL M.3143.
Order from OTS or SLA $1.10 61-28178

Trans. of Bezop[asnost'] Truda v Promyshl[ennosti] (USSR) 1960, v. 4, no. 6, p. 8-10.

DESCRIPTORS: Coal, Gases, Methanes, *Explosions, *Mining engineering, *Fires, *Safety.

A sudden outburst of coal and gas, accompanied by methane explosions and surface and underground fires occurred in 1959 at the Klyuchi mine of the Egorshinugol trust of the Sverdlovsk Council of National Economy. This serious accident was the result of infringements of the various requirements of the Safety Regulations for Coal and Slate Mines. (Extracted)

Tabakov, A. G.
SPEED UP THE INTRODUCTION OF SCIENTIFIC RESEARCH RESULTS INTO INDUSTRY. 3 Oct 61 [7]p. JPRS: 10409.
Order from OTS or SLA $1.10 61-28627

Trans. of Bezopasnost' Truda v Promyshlennosti (USSR), 1961 [v. 5] no. 7, p. 5-6.

DESCRIPTORS: *Mining engineering, *Safety, Scientific research, Industrial production, Ventilation, Coal, Particles, Moisture.

The organs of the State Technical Mining Inspection Administration should exert greater pressure on mine and tunnel supervisors to introduce research results into practice which would improve safety conditions for miners. (Author)

Titov, I. A.
THE DESIGNING OF (MARINE) PROPELLERS WITH AEROFOIL SECTIONS, tr. by E. R. Hope. June 61, 7p. DSIS T 354 R. AD-266 507
Order from NRCC NRCC C-3738

Trans. of Sudostroenie (USSR) 1958 [v. 24] no. 3(185) p. 10-16.

DESCRIPTORS: *Marine propellers, Design, *Airfoils, Propeller blades, Cavitation, Model tests, Ship models, Hydrodynamics.

Chemical Engineering

AZERBAIDZHAN OIL INDUSTRY, 1940, VOL. 20, NO. 6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 6p.
Order from OTS or SLA $1.10 61-20467

Abstract trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1940, v. 20, no. 6, p. 3-4 and 42-47.

DESCRIPTORS: *Oils, *Petroleum industry, Abstracting, Drills, Drilling machines, Clays, *Vaporization.

Contents:
Lagging in drilling should be eliminated, by Gasan-Zade
Use of spent clay for repeated contacting, by R. A. Kadanovskaya
Calculation of flash vaporization in a system with superheated steam, by B. P. Voinov.

AZERBAIDZHAN OIL INDUSTRY, 1940, VOL. 20, NO. 7: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 10p. 10 refs.
Order from OTS and SLA $1.10 61-20472

Abstract trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1940, v. 20, no. 7, p. 7-11 and 25-38.

DESCRIPTORS: Geology, *Oils, Deposits, Exploration, Iodine Gasoline, Solutions, Waxes, Abstracting, *Petroleum industry, Chemical analysis, Crystals, Separation.

Contents:
Stratigraphic deposits of oil and the problem of their exploration on the Apsheron Peninsula, by V. A. Gorin

A new method of concentration of "Petrov's Kontakt", by A. A. Markin, and others.
Concerning concentration of "Kontakt", by K. M. Sarkisov
Determination of iodine number in the gasoline "Galosha", by V. Ya. Masumyan and A. A. Degtyareva
Increasing the effectiveness of dewaxing. II. Dependence of the filtration of gasoline solutions of wax-containing products upon the nature of the gasoline, by D. Gol'dberg and L. Kupriyanova.

AZERBAIDZHAN OIL INDUSTRY, 1940, VOL. 20, NO. 8: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 8p. 3 refs.
Order from OTS or SLA $1.10 61-20338

Abstract trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1940, v. 20, no. 8, p. 1-10 and [23]-33.

DESCRIPTORS: *Petroleum industry, Abstracting, Periodicals, Indexes, *Well drilling, *Oils, *Desalination, Regeneration, Determination, *Sulfones.

Contents:
Drilling-the lagging section of the work of Azneftekombinat, by E. Grigor'yan and others
Desalting of oil, by D. N. Bukh and others
Application of the sulfone method to determination of the extent of regeneration of transformer oils, by O. G. Pipik.

CLASSIFICATION OF BASHKIR AND TATAR CRUDES: REFINING SULFUROUS CRUDES (Pererabotka Sernistykh Neftey). [1960] [11]p. AF 1419370.
Order from OTS or SLA $1.60 60-13530

Trans. of Nauchno-Issledovatel'skii Institut po Pererabotke Nefti. Trudy (USSR) 1959, no. 1, p. 5-19.

DESCRIPTORS: *Petroleum, Processing, Classification, *Fuel oil, Production.

Data are tabulated on the production of diesel fuels (and indirectly, jet fuels) from crudes of the Bashkir and Tatar oil fields.

EASTERN OIL, 1940, VOL. 2, NO. 5/6: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 11p.
Order from OTS or SLA $1.60 61-20357

Abstract trans. of Vostochnaya Neft' (USSR) 1940, v. 2, no. 5/6, p. 3-5, 8-23, 28-29, 37, 40-63, 66-67.

DESCRIPTORS: *Oils, *Petroleum, Abstracting, Periodicals, USSR, Geology, Well drilling, Refineries, Corrosion inhibition, Coatings, Gasoline, Sources, Lubrication.

Contents:
Stakhanovite movement and adaptation of new norms of production for the trusts Bashneft and Tuimazaneft, by N. I. Grishichev
Results and objectives of the geological prospecting in the Bashneft Trust, by V. V. Isherskii
Methods of oil prospecting in Bashkiriya, by A. A. Trofimuk
Geological structure and oil bearing of the Tuimazin region, by K. R. Timergazin
Drilling experience in Bashneft, by I. F. Melezhnikov
Lubricating economy in Ishimbaev oil fields, by E. M. Ivanov
Construction of equipment for refining corrosive oils from eastern fields, by T. A. Kislev
Diabase-cement anticorrosion coatings, by N. A. Butkov and N. I. Dobroshtan
Ishinbaev oils, by V. I. Iskanova and A. M. Lebedev
Oils from Tuimazin fields, by A. M. Lebedev and K. N. Loginova
Demulsifying and desalting unit at Ishimbaev, by P. I. Shashkin
Ishimbaev natural gasoline plant, by A. E. Dembo
Demulsification and desalting of emba oils, by M. A. Aslanova
The oil industry of the western Ukraine, by G. I. Mezentsev.

EASTERN OIL, 1940, VOL. 2, NO. 7/8: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 13p. 7 refs.
Order from OTS or SLA $1.60 61-20356

Abstract trans. of Vostochnaya Neft' (USSR) 1940, v. 2, no. 7/8, p. 1-3, 20-22, 33-46.

DESCRIPTORS: *Oils, *Petroleum, Abstracting, Periodicals, USSR, Gasoline, Kerosene, Production, Desulfurization, Greases, Physical properties, Chemical properties.

Contents:
Work of the oil trusts in "Second Baku" during Jan-July, 1940
A preliminary study of the bleaching properties of opoka found near the villages Voskresenskoe and Belogorodnya in the Saratov Province, by M. I. Kuadzhe and F. Ya. Anosov
Preliminary alkali treatment of liquid phase cracked distillates in refining with zinc chloride, by M. M. Gerasimov and V. E. Glushnev
Physico-chemical and commercial characteristics of the oil from coal Krasnokamsk region, by N. D. Gritsev and Z. V. Barmina.
Desulfurization of oil distillates with zinc hydroxide, by K. A. Musatov and L. G. Krymova
Factors influencing the consistency of greases, by L. S. Shekhoyan.

EASTERN OIL, 1940, VOL. 2, NO. 9: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 11p.
Order from OTS or SLA $1.60 61-20355

Abstract trans. of Vostochnya Neft' (USSR) 1940, v. 2, no. 9, p. 14-20 and 34-42.

DESCRIPTORS: *Oils, *Petroleum, Abstracting, Periodicals, USSR, Deposits, Gasoline, Desulfurization, Bauxite, Catalysts, Sulfur compounds, Aluminum compounds, Chlorides, Chemical waste, Potassium compounds, Chlorates.

Contents:
Oil bearing of the carboniferous deposits in the Saratov province, by N. I. Buyalov and others
Desulfurization of gasolines with bauxite catalysts, by Ya. A. Botnikov and others
Sulfur compounds from the aluminum chloride complex obtained in refining sulfurous gasoline, by I. I. Tsyganok and L. A. Vanyukova
Refining sulfurous gasolines by the chlorate method, by N. E. Vishnevskii.

EVAPORATOR SET, tr. by G. E. 13 Oct 61, 6p. (4 figs. omitted).
Order from OTS or SLA $1.10 61-28959

Trans. of French patent 1,197,675, internat. cl. F 22b - F 25h, by Société Française des Constructions Babcock and Wilcox, appl. 18 Sep 57, granted 8 June 59, pub. 2 Dec 59.

DESCRIPTORS: *Evaporators, Heat, Recovery, Waste gases, Feed water, Boilers, Steam.

An evaporator set is described intended especially for the recovery of heat from gas under pressure, wherein the boiler and the economizer are arranged in the same casing, and the nest of tubes of the economizer are helically wound around the nest of tubes of the boiler.

OUR COUNTRY'S CHEMICAL INDUSTRY ON THE 14TH ANNIVERSARY OF THE 15 AUGUST LIBERATION. 2 Mar 60, 10p. JPRS: 3042.
Order from OTS or SLA $1.10 60-31077

Trans. of Hwahak Kwa Hvahak Kongop (North Korea) 1959, no. 5, p. 1-6.

DESCRIPTORS: *Chemical industry, *Agriculture, Fertilizers, *Synthetic fibers, Synthetic rubber, Pharmacology, Cements, North Korea.

PETROLEUM INDUSTRY, 1940, VOL. 21, NO. 4(9): [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 10p.
Order from OTS or SLA $1.10 61-20786

Abstract trans. of Neftyanoe [Khozyaistvo] (USSR) 1940, v. 21, no. 4(9) p. 10-21, 47-49, 73-77, 83-99.

DESCRIPTORS: *Petroleum, Petroleum industry, Abstracting, Drilling machines, Drills, Hydrocarbons, Decomposition, Geophysical prospecting, Oils, Gasoline, Processing, Industrial plants, Kerosene, Airplane engine oils, Recovery, Transportation, Storage, Liquefied gases.

Contents:
The All Union Congress of the Scientific Society of Petroleum Engineers (no. 2) by L. G. Borinevskii
A technical-economical comparison of the turbine, electrical and rotary drilling, by Ya. M. Kershenbaum and others
Why was oil prospecting on the peninsula stopped, by I. G. Khimukhin
Fuller utilization of two furnace cracking units, by S. M. Togoev
New processes in the natural gasoline industry of the USA, by N. F. Sedykh
Reclamation of gasoline and kerosene, D. N. Burdov
Recovering spent aviation oils, G. Yu. Samedov
Oil reclaiming units VIME, by I. G. Georgiev
Transportation and storage of liquefied petroleum gases, by G. I. Kul'pin.

PETROLEUM INDUSTRY, 1940, VOL. 21, NO. 5(10): [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 4p. 18 refs.
Order from OTS or SLA $1.10 61-20785

Abstract trans. of Neftyanoe [Khozyaistvo] (USSR) 1940, v. 21, no. 5(10), p. 75-80 and 85-86.

DESCRIPTORS: *Petroleum, Petroleum industry, Abstracting, Refineries, Desulfurization, *Gasoline, Hydrocarbons, Decomposition, *Coke, Disposal.

Contents:
Present day methods of refining and desulfurization of cracked gasoline, by M. M. Gerasimov and V. E. Glushnev
Steam-air method of removal of coke from coils of tubular furnaces, by A. N. Leibo.

PETROLEUM INDUSTRY, 1940, VOL. 21, NO. 6(11): [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 13p.
Order from OTS or SLA $1.60 61-20784

Abstract trans. of Neftyanoe [Khozyaistvo] (USSR) 1940, v. 21, no. 6(11) p. 2-14, 26-36, 60-81.

DESCRIPTORS: *Petroleum industry, Abstracting, Periodicals, *Oils, Petroleum, Industrial production, Costs, *Labor, *Airplane engine Oils, Climatic factors, Natural gas, *Gasoline, Hydrocarbons, Processing, Zinc compounds, Chlorides, Catalysts, Catalysis

Contents:
Reducing the cost of production in the oil industry, by E. B. Gal'person
Objectives of the industry of natural gas, by Yu. I. Bokserman
Labor efficiency in the oil producing industry of USSR and USA, by N. M. Nikolaevskii
High quality winter oils, by E. G. Semenido
Oiliness of aviation oils, by K. K. Papok and K. I. Kogteva
Extent of refining of cracked gasolines with supported zinc chloride depending upon the amount of catalyst, by M. M. Gerasimov and V. E. Glushnev
Removing natural gasoline from the gas of the Ukrainian oil fields, by V. M. Raaben.

PETROLEUM INDUSTRY, 1940, VOL. 21, NO. 7(12): [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 7p.
Order from OTS or SLA $1.10 61-20783

Abstract trans. of Neftyanoe [Khozyaistvo] (USSR) 1940, v. 21, no. 7(12) p. 15-20, 27-38, 69-75, 86-105

DESCRIPTORS: *Petroleum, Petroleum industry, Abstracting, *Natural gas, Hydrocarbons, Decomposition, *Gasoline, Production, Airplane engine oils, Pipes, Oils, Gases, Transportation, Fuels.

Contents:
Utilization of natural gas of the Pryazov region, by V. Aleshinskii and V. Shteinman
Karadag field, by G. P. Ovanesov
Noiberdy, a new oil-bearing area in the Grozny region, by A. S. Goncharenko and V. A. Znamenskii
Proper use of flash towers in two-furnace cracking, by A. M. Frangulyan
Aviation requires low pour point oils, by V. V. Panov and V. K. Limar
Calculation of long gas pipe lines, by E. Kh. Odel'skii
Problem of oil under war conditions, by A. Santalov.

STUDIES IN LABOR PRODUCTIVITY. 6 Dec 61 [12]p. JPRS: 11467.
Order from OTS or SLA $1.60 62-13679

Trans. of Byulleten' Nauchnoi Informatsii. Trud i Zarabotnaya Plata (USSR) 1961, no. 6, p. 3-8 and 14-15.

DESCRIPTORS: *Chemical industry, *Industrial production, *Labor, Industrial equipment, Costs, Management engineering.

Contents:
Measuring and planning labor productivity on the basis of labor involved in basic chemistry, by Yu. Vinogradov and N. Samokhina
Developing branch methods for planning labor productivity, by B. Bukhanevich.

THE TASKS OF CHEMISTRY IN THE LIGHT OF THE DECISIONS OF THE MAY PLENARY SESSION OF THE C.P.S.U. CENTRAL COMMITTEE (Zadachi Khimicheskoi Nauki v Svete Reshenii Maiskogo Plenuma TsK KPSS). [1961] [8]p. (foreign text included). DSIR NLL M. 2580.
Order from OTS or SLA $1.10 61-28456

Trans. of Uspekhi Khimii (USSR) 1958, v. 27, no. 6 [p. I-IV].

DESCRIPTORS: *Chemical industry, Industrial production, Growth.

TECHNICAL NEWS, 1940, VOL. 9, NO. 19: [SELECTED ABSTRACTS. [1961] 2p.
Order from OTS or SLA $1.10 61-20781

Abstract trans. of Novosti Tekhniki (USSR) 1940, v. 9, no. 19, p. 25-27.

DESCRIPTORS: *Petroleum industry, Abstracting, Periodicals, *Hydrocarbons, Gases, Microanalysis, *Cements, Machines, Design, Well drilling.

Contents:
Present-day state of microanalysis of hydrocarbon gases, by V. Sokolov
Cementing aggregate TsA-150, by K. Ezhkov.

Battaglia, Andrzej.
STUDIES ON HYDROCYCLONES (PRINCIPLES OF OPERATION, DESIGN AND APPLICATION) (Badania nad Hydrocyklonami. Dzialanie, Konstrukcja i Zastosowanie) tr. by D. Brzostowska. 1961, 52p. 19 refs. PL-480 Int.
Order from OTS $0.50 60-21264

Trans. of Glowny Instytut Gornictwa. [Komunikat] (Poland) 1953, no. 144, 23p.

DESCRIPTORS: *Towers (Chemistry), Design, Operation, Tests.

Brounshtein, B. N.
DEHYDRATING OIL BY HIGH FREQUENCY CURRENT. [1961] 7p. 7 refs.
Order from OTS or SLA $1.10 61-20414

Trans. of Energeticheskii Byulleten' (USSR) 1946, no. 1, p. 26-30.

DESCRIPTORS: *Dehydration, *Oils, Desalination, *High frequency, *Electric currents.

Crombrugghe, O. de.
UNDERGROUND GASIFICATION (OF COAL) IN THE USSR. [1961] [105]p. 9 refs.
Order from OTS $2.50 62-11114

Trans. of Annales des Mines de Belgique, 1959, no. 5, p. 478-534.

DESCRIPTORS: *Coal gas, Production, Technological intelligence, Coal, Deposits, Gases, Handling, Gas flow, Turbulence, Aerodynamics, Reaction kinetics, Nitrogen, Carbon, Hydrogen, Oxygen, Sulfur, Steam, Water, Mining engineering, Labor, Economics.

Underground gasification in the U.S.S.R. has progressed tremendously since the war. That the method has not yet proven economical appears to be a question of the size of plants. With the experience gained in pilot plants Soviet technicians think they can extrapolate to a larger scale, at least as concerns lignite, what they have done on a semiindustrial scale. In one or two years, self-supporting plants will doubtless be operating. If their efforts are successful, energy from underground gasification will contribute to the economics of new and promising regions within 5 to 7 years. (Author)

Fratini, Nicola and Schippa, Giovanni.
EVALUATION OF THE QUANTITIES OF HYDROLYSIS LIME PRESENT IN THE CEMENT PASTES BY MEANS OF X-RAYS, PAPER 1. [1961] 9p. 4 refs.
Order from SLA $1.10 61-20559

Trans. of la Ricerca Scientifica (Italy) 1960, v. 30, no. 12, p. 2030-2037.

DESCRIPTORS: Hydrolysis, *Calcium compounds, *Oxides, Quantitative analysis, X-ray diffraction analysis, *Cements, *Hydroxides, *Mortar.

After some considerations on the method of quantitative X-ray diffractometry the authors describe the procedures followed and the results obtained in a determination of the hydrolysis lime in cement paste employing an X-ray spectrograph with Geiger counter, using calcium hydroxide as an internal standard. (Author)

Hou, T. P.
INDIAN AND JAPANESE AMMONIUM-CHLORIDE PLANT EQUIPMENT AND LAYOUT, AND EFFECTIVENESS OF AMMONIUM CHLORIDE AS FERTILIZER. [1961] 4p.
Order from OTS or SLA $1.10 61-20889

Trans. of [Hua-Hsüeh Kung Yeh] (Chinese People's Republic) 1957, no. 10, p. 49-51.

DESCRIPTORS: *Chemical industry, India, Japan, *Ammonium radicals, *Chlorides, *Fertilizers, Effectiveness, Industrial equipment.

Korshak, V. V., Mosgova, K. K., and Shkolina, M. A.
PREPARATION OF GRAFT COPOLYMERS. IV. GRAFTING OF STYRENE TO POLYAMIDES. [1961] [8]p. 3 refs.
Order from OTS or SLA $1.10 61-20636

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1 [no. 11] p. 1573-1579.

DESCRIPTORS: Polymers, *Amides, Polymerization, *Copolymerization, *Styrenes, Physical properties, Chemical properties.

Graft polymers were obtained from ozone-treated polycaprolactam and mixed polyamide Anide G-669, and styrene. Several physical and physico-chemical properties of graft polymers were studied. These differ noticeably from the properties of the initial polyamides. The effect of prolonged ozonization on the mechanical, thermomechanical, optical, and other properties of polyamides is explained. Results of investigation of the separated graft layer confirm the hypothesis concerning the formation of strong chemical bonds between the polyamide and polystyrene, which arise in the process of grafting of the monomer to the polyamide. (Author)

Mamedli, M. G. and Aliev, M. S.
SYNTHETIC FUELS PRODUCTION TECHNOLOGY (K Voprosu o Tekhnologii Proizvodstva Sinteticheskikh Topliv). [1961] [12]p. 5 refs. AF 1419499.
Order from OTS or SLA $1.60 61-28351

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii]. Neft' i Gaz (USSR) 1959 [v. 2] no. 2, p. 67-74.

DESCRIPTORS: Industrial production, Chemical analysis, *Jet engine fuels, Fractionation, *Hydrocarbons, Decomposition, Aluminum compounds, Chlorides, Catalysis, Catalysts, Distilling plants, Temperature, Pyrolysis, *Fuels.

Tests showed that it is possible to produce high quality T-1 jet fuel from the middle fractions of light thermal cracking products. The established optimum conditions for catalytic conversion of the hydrocarbons contained in the cracked distillates are: temperature - 220° C; reactor contact time of charge stock with catalyst - 30 minutes; amount of aluminum chlorides - 2% (weight) per charge stock.

Mustafin, I. S.
STYRENE FROM OIL GAS TAR. [1961] 4p. 8 refs.
Order from OTS or SLA $1.10 61-18008

Trans. of Saratov U. Uchenye Zapiski (USSR) 1940, v. 15, no. 4, p. 147-150.

DESCRIPTORS: *Styrenes, Refineries, *Coal tar, *Fuel oil, Polymers, Pyrolysis, Regeneration, Magnesium, Dielectric properties.

Romankov, P. G.
GOALS OF THE DEVELOPMENT OF SCIENTIFIC RESEARCH WORK IN THE FIELD OF CHEMICAL ENGINEERING AND EQUIPMENT. Presented at meeting of the Inorganic Chemical Technological Committee, 24 June 60. 21 July 61, 15p. JPRS: 8614.
Order from OTS or SLA $1.60 61-27850

Trans. of Magyar Tudomanyos Akademia Kemiai Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1961, v. 15, no. 1, p. 1-15.

DESCRIPTORS: *Chemical engineering, *Chemical industry, Industrial equipment, Hydrodynamics, Heat transfer, Adsorption, Heat exchangers, Scientific research, Research program administration.

Stepanenko, M. A., Matusiak, N. L. and others.
ACCELERATION OF THE PROCESS OF PREPARATION OF HIGH-MELTING PITCH. [1961] 4p.
Order from OTS or SLA $1.10 61-20920

Trans. of Koks i Khim[iya] (USSR) 1957, no. 7, p. 43-46.

DESCRIPTORS: Melting, *Pitch, Oxygen.

Stepanenko, M. A. and Matusiak, N. I.
COAL-TAR PITCH WITH SOFTENING TEMPERATURE 250° OR ABOVE. [1961] 5p.
Order from OTS or SLA $1.10 61-20922

Trans. of Koks i Khim[iya] (USSR) 1957, no. 10, p. 38-41.

DESCRIPTORS: *Coal tar, *Pitch, Temperature, Melting, Oxidation, Cooling, Viscosity, Distilling plants.

Investigations conducted under laboratory conditions have demonstrated the possibility of preparation, by the method of oxidative polymerization, of condensates of pitches with a wide range of softening temperatures, up to high-melting products giving 18-20% yield of volatiles. In this case two production schemes are possible: (1) preparation of pitch with softening temperature markedly higher than 150°, but which possesses mobility at high temperature; and (2) preparation of pitch giving 18-20% yield of volatiles, which is high-melting and exists in the solid state at a temperature of about 300°. (Author)

Veit, Philipp.
COKING PERIOD IN COKE-OVENS [Garungsdauer in Koksöfen]. [1961] 17p. 36 refs.
Order from SLA $1.60 61-20856

Trans. of Brennstoff-Chemie (West Germany) 1950 v. 31 [no. 1/2] p. 14-22.

DESCRIPTORS: *Coke, Ovens, Construction, Coal, Combustion chambers, Thermal radiation, Thermal conductivity, Temperature.

Civil Engineering

PROBLEMS ARISING FROM JOINTS IN CONCRETE ROADS. [1961] [27]p. 15 refs.
Order from SLA $2.60 61-18955

Trans. from Revue Générale des Routes et des Aérodromes (France) 1954, no. 265.

DESCRIPTORS: *Concrete, *Roads, *Joints, Temperature, Moisture, Stresses, Humidity, Fracture (Mechanics), Beams, Traffic, Adhesives, Reinforcing materials, *Expansion joints.

PRODUCTS FOR ROAD JOINTS. Pt. 1 of Specifications Concerning Sealing Materials for the Covering of Concrete Joints. [1961] [12]p. (4 figs. omitted).
Order from SLA $1.60 61-16462

Trans. of unidentified [French] language article pub. by Road Research Center, Brussells, 1955 (?)

DESCRIPTORS: *Roads, *Joints, Specifications, *Concrete, *Sealing compounds, *Bituminous surfacing, *Runways.

Kalmanok, A. S.
DESIGN OF SECTIONAL REINFORCED CONCRETE DECKS UNDER LOCAL LOADING (K Raschetu Sbornykh Zhelezobetonnykh Perekritii na Mestnuyu Nagruzku) tr. by E. Feigl. [1961] [7]p. (foreign text included). [CSIRO] Trans. no. 4832.
Order from OTS or SLA $1.10 61-28642

Trans. of Beton i Zhelezobeton (USSR) 1959, no. 7, p. 329-330.

DESCRIPTORS: *Reinforced concrete, Design, *Floors, Housing, *Load distribution, Construction, *Joints, Deformation, *Stresses,

The load of partitions running along the span of a deck may, with an error not exceeding 5%, be assumed as being uniformly distributed over a width of the deck equal to the length of its span. (Author)

Karev, G. A.
INITIAL PRIMING OF SIPHON SPILLWAYS (O Vklyuchenii Sifonnykh Vodosbrosov v Raboty). 1961, 24p. PL-480 Int.
Order from OTS $0.50 61-11433

Trans. of Inzhenerno-Stroitel'nyi Institut, Tomsk. Sbornik Nauchnykh Trudov (USSR) 1957, v. 2, p. 97-123.

DESCRIPTORS: Water, *Hydraulic systems, Structures, Mathematical analysis, *Dams, Storage, pressure, Valves, Automatic, Sensitivity, Ducts, Primers.

Theoretical statements are presented based on research on models of flat profile siphons. The main factors determining the character of priming of the automatic siphon spillway are: (1) the sensitivity of the siphon priming, which depends on the type of the structure and the priming conditions; (2) the conditions in the headwater characterizing the variations of the inflow rate into the headwater $Q_{inf} = f(t)$ and the storage capacity of the reservoir $V = \varphi(h)$, or of the reduced model area of the headwater table within the limits of the backwater curve $(\varepsilon\ \Omega) = \varphi_1(h)$; and (3) the condition in the tailwater section characterized by the curve relating the discharges and levels in the tailwater, $Q = f(h_{tw})$, and also by the degree of submergence of the outlet opening of the siphon during priming. The sensitivity of the siphon priming should correspond to the conditions in the headwater. It should be higher, the greater the quantity of inflow of the headwater $Q_{inf} = Q_o$, and the smaller the area of the headwater table (Ω) at the initial priming, and the quicker Q_{inf} increases, and the slower (Ω) increases in the priming process. The basic measures taken in order to raise the sensitivity of the siphon spillway in its priming action are listed.

Sintsyn, A. P. and Glushkov, G. I.
CONCRETE ROAD SURFACES UNDER THE ACTION OF DYNAMIC LOADS (Tsementobetonnye Pokrytiya pod Vozdeistviem Podvizhnykh Nagruzok). [1961] 12p. (6 figs. omitted) 5 refs. Ref 21/30/64; [DSIR NLL] M 1469.
Order from OTS or SLA $1.60 61-13537

Trans. of Avtomobil'nye Dorogi (USSR) 1959, v. 22, no. 4, p. 25-27.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-14798 [1960] 4p.

DESCRIPTORS: Concrete, *Roads, Surfaces, Surface properties, Load distribution, Tests.

For abstract see Technical Translations 4: 30, 1960.

DEVELOPMENT OF THE PRODUCTION POTENTIAL OF EASTERN SIBERIA. [1961] 220p. 20 refs. H-8470; JPRS (R-1888-D).
Order from OTS $3.50 62-11113

Trans. of mono. Razvitie Proizvoditel'nykh sil Vostochnoi Sibiri; Energetika (Development of the Productive Forces of Eastern Siberia; Energetics) Moscow, 1960, p. 5-22, 40-41, 52-73, 83-165, 175-176, 186, 202-217, 233-239, 249-274, 284-292, 327-331, 342-360, 380-413.

DESCRIPTORS: *Electric power production, Siberia, Thermoelectricity, Fuels, Water supplies, Hydroelectric power systems, Dams, Transmission lines, Electrical conductance, Railroads, Urban areas, Electrical engineering, Conferences, *Electrical equipment, *Electrical industry.

Contents:
Perspectives of the development of power in Eastern Siberia and its role in the creation of a single power system for the USSR
Thermofication in Siberia (conclusions) by G. I. Rossievskii
Thermofication effectiveness (conclusions) by A. R. Monastyrskaya
Thermal electrostations and thermofication (conclusion) by Ya. I. Khainson
Fuel resources and sources of heat supply for rayons in Eastern Siberia, by I. N. Ozarnoi
Water power resources in Siberia and their use, by A. N. Voznesenskii and A. A. Beschinskii
A scheme for using the power of the upper course of the Yenisei, by Ya. B. Margolin
Use of the power of the Yenisei in the Krasnoyarsk section; the Podkamennaya Tunguska River and construction of the Yeniseisk Ges, by N. A. Malyshev
The Krasnoyarsk Ges, by N. A. Filimonov and N. V. Khlebnikov
Plan for utilizing the power of the Angara, by N. A. Grigorovich
The scheme for power utilization of the Lena and its tributaries, by A. K. Marturosyan and others
The scheme for the complex power utilization of the Irtysk, by G. A. Pretro
The scheme for utilizing the power of the upper course of the Ob and the Kamensk Ges, by A. V. Egorov
Schemes for utilizing the power of the lower course of the Ob, by A. N. Chemin
Combined hydroelectric power operation (conclusions) by I. Ya. Shimel'mits and M. I. Rubinshtein
Building reservoirs (conclusions) by V. I. Vozdvizhenskii and others
Basic problems for creating and developing a combined power system for Siberia, by V. I. Veits and others
The scheme for development of the YeEs (Yedinaya Elektricheskaya Sistema, combined electric power system) for Central Siberia, by A. N. Zeiliger
The role of hydroelectric power plants in forming the YeEs of Central Siberia, by K. P. Kislov and L. O. Saamchyan
The Kazakhstan power systems and their connection with the Siberian YaEs and the YeEs of the Eastern part of the USSR, by S. Y. Maizel'
Prospects for forming a YeEs for trans-Baikal and the Far East, by S. V. Klopov and V. A. Shelest
The development of the trans-Baikal power systems and joining them with the Central Siberian YeEs, by V. M. Selyumin
The power regimes of the inter-system power lines of the Siberian YeEs, by M. M. Lebedev
Technical and economic indicators of long-distance electric power transmissions and inter-system DC couplings, by A. V. Posse
Power transmission from the Yenisei Ges to the Urals, by N. A. Malyshev
Power carriers for high-temperature processes (conclusions) by A. S. Nekrasov
Perspectives for the development of electric traction of the railroads of Siberia, by V. V. Zubchenko
The complex power systems of cities in Eastern Siberia, by Ya. M. Cherbonenkis
Materials of the meeting [and] review of the addresse in the power engineering section and at the joint session of the power and fuel section of the conference, by B. I. Shvorin
Resolution of the power engineering section of the Conference on the Development of the Production Resources of Eastern Siberia.

USSR COMMUNICATIONS: SELECTED TRANSLATIONS NO. 6. 28 Apr 61, 21p. JPRS: 4578.
Order from OTS $0.75 61-21638

Trans. of Radio, Moscow (USSR) 1961, no. 1, p. 4-7 and Tekhnika Kino i Televideniya (USSR) 1961 [v. 5] no. 1, p. 7-10 and 95.

DESCRIPTORS: *Radio broadcasting, *Television, Television communication systems, Communication systems.

Contents:
Radio broadcasting and television in 1961
The new Moscow television center
Prospects for television development in the USSR
Television planning work in 1960-61.

USSR ELECTRIC POWER: SELECTED TRANSLATIONS NO. 6. 23 May 61, 27p. JPRS: 8307.
Order from OTS $0.75 61-31155

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1960 [v. 30] no. 11, p. 1-5; no. 12, p. 5-22; Elektricheskie Stantsii (USSR) 1960 [v. 31] no. 12, p. 5-9; Planovoe Khozyaistvo (USSR) 1960, no. 11, p. 75-78; Moscow U. Vestnik. Seriya 5: Geografiya (USSR) 1960 [v. 15] no. 5, p. 14-19; and from Stroitel'naya Gazeta (USSR) 1960, 25 Dec, p. 2; and Ekonomicheskaya Gazeta (USSR) 1961, 11 Jan, p. 1.

DESCRIPTORS: *Electric power production, Electrical engineering, Construction, Agriculture, *Thermoelectricity.

Contents:
Construction industry enterprises in electric power construction, by P. S. Neporozhnii
The Leninist electrification of the USSR, by I. T. Novikov

Technical problems in power construction and the complete electrification of the USSR, by P. S. Neporozhnii
Construction of thermal electrical power plants, by A. M. Nekrasov and F. A. Ryazanov
Electric giants of the Seven-year Plan
The year of major electric power construction
Accelerate the rate of electrification of Ukrainian agriculture, by S. Oleksenko and M. Zil'berbrand
Certain problems of electric power development in the Kuibyshev economic administrative region, by P. N. Stepanov and Yu. N. Savenko.

Aksenov, Y. I. and Borodin, M Ya.
WAVEGUIDE METHOD OF MEASURING THE DIELECTRIC PROPERTIES AT ELEVATED TEMPERATURES. [1961] [13]p. (6 figs. formulae omitted) 7 refs.
Order from OTS or SLA $1.60 62-10108

Trans. of Radiotekhnika i Elektronika (USSR) 1956 [v. 1] no. 11, p. 1435-1443.

DESCRIPTORS: Materials, Dielectric properties, Measurement, Temperature, *Waveguides, *Dielectrics.

The present report discusses the short-circuiting and idling method in the waveguide for the purpose of determining the dielectric properties of materials on a wave with a length of 3.2 cm in the temperature range of 20 to 200°C. Formulas are supplied for the calculation of $\mathcal{E}'$ and $\mathcal{E}''$ dependence of some high molecular substances and materials. (Author)

Basov, N. G., Strakhovskii, G. M., and Cheremiskin, I. V.
THE J=3, K=3 LINE. Pt. 2 of Investigation of Molecular-Generator Frequency as a Function of Various Parameters. 2 Aug 61, 2p. 1 ref. AID rept. 61-115.
Order from OTS or SLA $1.10 61-28472

Abstract trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 6, p. 1020-1028.

DESCRIPTORS: Molecular beams, *Masers, Frequency, Voltage, Gases, Pressure, Cavity resonators.

Berkovskii, A. G. and Pol'skii, V. G.
A STUDY OF THE TIME RESOLUTION OF PHOTOMULTIPLIERS USING THE OSCILLOGRAPHIC METHOD. 17 Aug 61 [7]p. 1 ref. MCL-1197/1+2.
Order from OTS or SLA $1.10 61-28707

Unedited rough draft trans. of #Radiotekhnika i Elektronika (USSR) 1960, v. 5, no. 9, p. 1475-1477.

DESCRIPTORS: *Photomultipliers, *Oscillographs, Time, Measurement, Light, Sources, Frequency, Anodes, Photoelectrons, Cathodes (Electron tubes), Electronic circuits, Synchronizers, Electric discharges, Electric potential, Pulse analyzers.

A method is given for measuring the time resolution of photomultipliers using a high-speed oscillograph and periodic light flashes of nanosecond duration. The results of measuring the time parameters of the group of photomultipliers are given. (Author)

Bruevich, N. G.
PROBLEMS OF THE RELIABILITY AND ACCURACY OF ELECTRONIC EQUIPMENT IN THE BUILDING OF MACHINERY AND INSTRUMENTS (Voprosy Nadezhnosti i Tochnosti Elektronnykh Ustroistv v Mashinostroenii i Priborostroenii). 17 Aug 61 [33]p. 7 refs. JPRS: 9927.
Order from OTS or SLA $3.60 61-27762

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 1, p. 185-200.

DESCRIPTORS: *Electronic equipment, Reliability, *Storage, *Electronic circuits, Impedance, Electric currents, Failure (Mechanics), *Computers, Errors, Machines.

The reliability of equipment is defined not only by the absence of failures but also by correspondence of the results with the permissible variations. There exists equipment whose reliability is determined mainly by the second requirement. In the storing of components one must have in mind their reliability in the sense of absence of short circuit and reliability in the sense of absence of a break. The optimal circuit for the storing of components depends on which reliability is lower. It cannot be considered that the storage of components always has been carried out successfully if the storage circuit was not short circuited, was not broken and did not lose directivity of impedance to the current. At the present time it is necessary to determine experimentally which components of equipment it is safe to store. The storage of components of continuously operating electronic computers requires consideration of the relative reliabilities. (Author)

Coales, J. F., ed.
AUTOMATIC AND REMOTE CONTROL, VOLS. 1-4. Nov 61, 4v.
Order from Butterworth Inc., 7235 Wisconsin Ave., Washington, 14, D. C. $44.00, $165.00/set

Trans. of mono. International Congress of the Federation of Automatic Control (IFAC) (no. 1) held at Moscow, 1960. Proceedings.

DESCRIPTORS: Automatic, Control, *Remote control systems, *Control systems, *Linear systems, Theory, Statistical processes, Simulation, Digital computers, Computers, Pneumatic devices, Metallurgy, Electric power production, Transportation, Industrial production, Chemical industry, Petroleum industry, Nuclear engineering, *Automation, Conferences.

Eremeev, A. S.
PROSPECTS OF INCREASING THE CAPACITY OF HYDROGENERATORS (Perspektivy Povysheniya Moshchnosti Gidrogeneratorov). 1961, 9p. 1 ref. PL-480 Int.
Order from OTS $0.50 60-51135

Trans. of Vestnik Elektropromyshlennosti (USSR) 1959 [v. 30] no. 11, p. 4-8.

DESCRIPTORS: *Hydroelectric power systems, *Generators, Construction, Water, Cooling, Liquid cooled, Operation, Tests.

Conclusions: The use of direct water-cooling for hydrogenerators permits doubling the power of machines of the same over-all size as compared with air-cooled machines. The consumption of active iron per KVA is reduced to approximately one half and of copper to one fourth of the ordinary consumption. (Author)

Henneberg, Hans.
A NEW POINT LOCATING SYSTEM FOR HIGH-CURRENT UNDERGROUND CABLE. 23 Sep 60, 13p. 2 refs. JPRS: 3957.
Order from OTS or SLA $1.60 60-31782

Trans. of Siemens Zeitschrift (West Germany) 1959 [v. 33] no. 11, p. 698-703.

DESCRIPTORS: *High frequency, Transmission lines, *Electric cables, Maintenance, Instrumentation, Acoustics.

Krasnushkin, N. and Smirnov, K.
METHODS OF COMBATING ICING ON OVERHEAD LINES. [1961] [44]p. C. E. Trans. 1892; [DSIR LLU] M4036.
Order from OTS or SLA $4.60 61-28191

Trans. of unidentified Russian mono., n.p., 1935(?) p. 5 and 15-61.

DESCRIPTORS: *Electric cables, *Transmission lines, *Ice prevention, *De-icing systems, Electric currents, Electrical networks, Tables, Heat transfer, Voltage, Melting.

This paper presents the results of analytical and experimental studies in combating icing, carried out by Donets scientific-research laboratory icing group in collaboration with Donets Power Control. (Author)

Krasovskii, A. A.
DYNAMICS OF CONTINUOUS OPTIMAL CONTROL SYSTEMS, BASED ON THE GRADIENT METHOD (Dinamika Nepreryvnykh Sistem Ekstremal'nogo Regulirovaniya, Osnovannykh na Metode Gradienta). [1961] [29]p. (foreign text included) 12 refs.
Available on loan from SLA 62-14013

Rough draft trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energ[etika] i Avtomatika, 1959, no. 3, p. 43-49.

DESCRIPTORS: Control, *Control systems, Stability, Numerical analysis, Calculus of variations.

An analysis is presented of problems of the dynamics of continuous optimal control systems with several controllable quantities and with measurement of the components of the gradient of the optimal function. Such systems can be considered linear at small deviations from the optimum point. The properties of these systems are simply determined by means of a quadratic form that approximates the characteristic of the object in the vicinity of the optimum.

Kuntsevich, V. M.
ON CERTAIN PROPERTIES OF STATIC OPTIMALIZING CONTROLLERS. 14 Aug 61 [13] p. JPRS: 4867.
Order from OTS or SLA $1.60 61-27943

Trans. of Avtomatyka (USSR) 1961, no. 2, p. 24-28.

DESCRIPTORS: *Control systems, Electrical properties, Feedback, Stability, Mathematical analysis.

This paper shows that Minorsky's theorems and K(D)-representations can also be applied for optimalizing systems. In addition, it was confirmed that all forms of the invariant conditions can be applied not only to the ordinary, but as well to optimalizing systems. (Author)

Lazarov, V. G. and Piyl', E. I.
CONCERNING THE INTEGRATION OF POTENTIAL-PULSE FORMS (Ob Integrirovanii Potentsial'no-impul'snykh Form). 10 Oct 61 [9]p. 3 refs. JPRS: 10438.
Order from OTS or SLA $1.10 61-28897

Trans. of Akademiya Nauk SSSR. Doklady [1961] v. 139, no. 3, p. 556-559.

DESCRIPTORS: Electrical networks, Digital computers, Computers, Circuits, Computer logic, Synthesis. Algebra, Integration, *Pulse integration.

An algebraic method is described for integrating potential-pulse forms that makes it possible to simplify the corresponding networks.

No, Chin-p'il.
PROBLEMS IN THE CONSTRUCTION OF SMALL HYDROELECTRIC POWER PLANTS IN RURAL AREAS OF NORTH KOREA. 2 Mar 60, 12p. JPRS: 2321.
Order from OTS or SLA $1.60 60-11350

Trans. of Chollyok (North Korea) 1959, no. 7, p. 47-51.

DESCRIPTORS: *Hydroelectric power systems, *Power plants, Rural areas, North Korea, Construction.

Pertsov, S. V.
THE NOISE OF PARAMETRIC AMPLIFIERS BASED ON SEMICONDUCTOR DIODES AND METHODS OF EFFICIENTLY REDUCING IT. 13 Oct 61 [42]p. 10 refs. MCL-1230/1+2. AD-265 695
Order from OTS or SLA $4.60 62-13006

Unedited rough draft trans. of Poluprovodnikovye Pribory i Ikh Primenenie: Sbornik Statel (USSR) 1960, v. 6, p. 63-91.

DESCRIPTORS: *Microwave amplifiers, Amplifiers, *Noise (Radio), Reduction, *Semiconductors, *Diodes, Cooling, Superhigh frequency, Frequency, Radio receivers, Masers.

This article examines the noise characteristics of diode parametric amplifiers. Formulas for the noise factor of single-circuit and two-circuit parametric

amplifiers and converting amplifiers are derived. Methods of reducing the noise factor are considered; the use of these methods makes it possible to produce parametric amplifiers with noise characteristics as good as those of masers. It is shown the use of parametric amplifiers at the input of superhigh frequency receiving devices makes it possible to raise the limiting sensitivity to the potential limit permitted by the noise level of the antenna. (Author)

Pontryagin, L. S.
OPTIMAL PROCESSES OF CONTROL (Optimalnie Protsessi Regulirovaniya). April 60 [31]p. 7 refs. MCL-491/V. AD-259 602.
Order from OTS or SLA $3.60 61-27264

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1959, v. 14, no. 1 [85] p. 3-20.
Another trans. is available from ATS $20.95 as ATS-03L33R [1959] 19p.

DESCRIPTORS: *Control systems, Linear systems, Operation, Synthesis, Mathematical analysis, Calculus of variations.

Considerations are given to (1) the necessary conditions of the optimality principle of the maximum, (2) proof of the principle of the maximum, (3) linear controls optimal from the viewpoint of fast response, (4) uniqueness theorms for linear controls, (5) the existence of optimal controls for linear systems, and (6) synthesis of linear optimal control. (See also 61-23140, 61-23141, 61-23560)

Yanovskii, M. S. and Kuleshov, E. M.
A MECHANICAL WAVEGUIDE DEVICE FOR FREQUENCY CONVERSION. 21 Sep 61 [3]p. MCL-1282/1+2. AD-265 704.
Order from OTS or SLA $1.10 62-13005

Unedited rough draft trans. of Byulleten' Izobretenii (USSR) 1961, no. 3, p. 1-2.

DESCRIPTORS: *Frequency converters, *Frequency shift, Electromagnetic waves, *Wave guides, Design.

This device, based on the use of the Doppler effect of a shift in the frequency of electromagnetic waves when they are reflected from moving surfaces, has the special feature that, in order to increase the value of the frequency shift, it is made in the form of a ring waveguide with square cross section, split along the neutral line, with a fixed upper section and a movable lower section containing one or two short-circuited waveguides for the formation of a revolving, reflecting, discontinuity. (Author)

Mechanical Engineering

Heuvel, H. A.
WATER TUBE RADIATION BOILER, tr. by F. H. B. and P. C. C. 4 Oct 61, 12p. (15 figs. omitted).
Order from OTS or SLA $1.60 61-28953

Trans. of Belgian patent 494, 237, by N. V. Bronswerk Amerfoortse Machine- en Apparatenfabriek "A. M. A. F.", appl. 1 Mar 50, granted 31 Mar 50, pub. 1 July 50 (priority claimed based on patent appl. filed in the Netherlands 3 Mar 49, per statement of applicant).

DESCRIPTORS: *Boilers, Boiler tubes, *Feed water, Evaporation, Steam condensers.

The invention relates to a water tube radiation boiler especially a small capacity boiler. The invention relates also to an evaporator, preferably constructed as a single flue boiler having at least two vertical corner tubes serving as downpipes, to which evaporator a vertical or horizontal watersteam holder is connected. Said evaporator is further connected with the top and bottom ends of these corner pipes so that it functions as boiler water accumulator. (Author)

Zahorka, H.
PROGRESS IN THE BASIC LINING OF GLASS MELTING TANKS. [1961] [16]p. 10 refs.
Order from SLA $1.60 61-18387

Trans. of Radex-Rundschau (Austria) 1958, no. 3/4, p. 154-172.

DESCRIPTORS: *Glass, Melting, Brick, Combustion chambers, Design, *Combustion chamber liners, Refractory coatings.

An attempt is made to give a comprehensive survey of the basic lining of tank furnaces for melting glass in general and the checkerworks of regenerators in particular, with particular reference to the linings already constructed. From the large number of these it can be conjectured that this type of lining is well past the experimental stage (the amount of basic brick employed already runs into several thousands of tons). In addition to basic checkers, technically satisfactory designs of the masonry of furnaces, which were planned and executed in collaboration between user and producer, have been in operation for many years to the fullest satisfaction of both. (Author)

Ordnance, Missiles, and Satellite Vehicles

Klajic, Ljubomir.
THE EMPLOYMENT OF CBR AGENTS IN WARFARE. 12 Oct 60, 21p. JPRS: 6085.
Order from OTS or SLA $2.60 60-31842

Trans. of Vojno Delo (Yugoslavia) 1959, v. 11, no. 7/8, p. 400-416.

DESCRIPTORS: Warfare, *Radiological warfare, *Biological warfare, *Chemical warfare, Radioactivity, *Radiation effects, Contamination, Combat, Weapons.

Pokrovskii, G.
METEOR-ROCKET. 1 Dec 61 [6]p. FTD-TT-61-190.
Order from OTS or SLA $1.10 62-15277

Unedited rough draft trans. of Tekhnika Molodezhi (USSR) 1961 [v. 29] no. 1, p. 37.
An abstract trans. is available from OTS or SLA $1.10 as 61-19853, AID-61-51, 18 Apr 61, 2p.

DESCRIPTORS: *Spaceships, *Re-entry aerodynamics, *Meteors, *Rockets, *Deceleration, *Electric discharges, Dielectric properties.

The electric charge on the nose of a rapidly flying body changes the intensity of the body's deceleration. The use of this effect in the development of a deceleration engine for space vehicles is discussed.

Sedov, L. I.
DYNAMIC EFFECTS IN THE MOTION OF AN ARTIFICIAL SATELLITE. [1961] 22p. (4 figs. 1 table omitted) 9 refs.
Available on loan from SLA 62-14003

[Rough draft] trans. of Iskusstvennye Sputniki Zemli (USSR) 1958, v. 2, p. 3-9.

DESCRIPTORS: *Satellite vehicles, Motion, Orbital flight paths, Flight paths, Gravity, Terrestrial magnetism, Magnetism, Inertia, Geophysics, Aerodynamics, Perturbation theory.

Zonov, Yu. V.
ON THE PROBLEM OF THE INTERACTION BETWEEN A SATELLITE AND THE EARTH'S MAGNETIC FIELD (K Voprosy O Vzaimodeistvii Sputnika S Magnitnym Polem Zemli). [1961] [29]p. (foreign text included) 4 refs.
Available on loan from SLA 62-14009

Rough draft trans. of Iskusstvennye Sputniki Zemli (USSR) 1959, v. 3, p. 118-124.
Another trans. is available from OTS $0.50 as 60-21599, NASA TT F-37, May 60, 11p.

DESCRIPTORS: *Satellite vehicles, Motion, *Terrestrial magnetism, Magnetism, Magnetic effects.

For abstract see Technical Translations 4: 100, 1960.

Sanitation and Safety Engineering

PROBLEMS OF HEALTH RESORT SCIENCE, RADON THERAPY AND HYDROAEROIONIZATION IN THE USSR. 31 Aug 61 [22]p. JPRS: 10011.
Order from OTS or SLA $2.60 61-28258

Trans. of Voprosy Kurortologii, Fizioterapii i Lechebnoi Fizicheskoi Kul'tury (USSR) 1961 [v. 26] no. 3, p. 276-285.

DESCRIPTORS: Conferences, *Public health, *Therapy *Radon, Water, *Health resorts.

Contents:
All-union conference of active workers of the sanatorium and health resort institutions and rest homes of trade unions, by V. V. Poltoranov
Symposium on radon therapy, by F. L. Leites
All-union conference on aero- and hydro-aeroionization.

U.S.S.R. LITERATURE ON AIR POLLUTION AND RELATED OCCUPATIONAL DISEASES, VOL. 7. A SURVEY, by B. S. Levine. [1961] [345]p.
Order from OTS $5.00 62-11103

DESCRIPTORS: *Atmosphere, *Air, *Contamination, *Sanitary engineering, *Exhaust gases, Diseases, *Industrial medicine, *Sanitary engineering, *Bibliography, Public health.

Translations of 60 technical papers, originally published in Soviet journals between 1955 and 1960, are arranged more or less chronologically under 6 sections. The papers deal with the medical, chemical, physical, engineering, instrumentation, and other aspects of air polution. One of the papers reports that air tested in city streets was heavily polluted with lead from the exhaust of cars burning ethylated gasolene, and that lead poisoning was found in traffic directors who had never been in contact with lead. The paper recommends that "the use of ethyl lead gasolene be discontinued." Of the 60 papers included here, 27 of them came from the journal Gigiena i Sanitariya (Hygiene and Sanitation), 13 came from Koks i Khimiya (Coke and Chemistry), and 9 came from Gigiena Truda i Professional'nye Zabolevaniya (Industrial Hygiene and Occupational Diseases). (See also 61-11149, 61-21982, 61-31601)

Meleshko, V. P.
INDUSTRIAL WATER DESALINATION: AN INDUSTRIAL ION-EXCHANGE INSTALLATION FOR THE DEEP DESALINATION OF WATER. 23 Jan 61, 11p. JPRS: 4350.
Order from OTS $0.50 61-11898

Trans. of Khimicheskaya Promyshlennost' (USSR) 1960, no. 1, p. 41-44.

DESCRIPTORS: *Water, Water filters, Purification, *Desalination, *Ion exchange, *Industrial equipment.

This installation, with an output capacity of 10 m^3 (cubic meters) of desalted water per hour, was put into operation in May 1957. The installation receives clarified water from the city water supply system; its total salt content is 4 to 5 milligram-equivalents/liter. The purified water has a resistivity of $2\text{-}4 \times 10^6$ ohm-centimeters and is used industrially as a substitute for the water formerly obtained by plain distillation. The cost of the desalted water amounts to approximately 8 rubles per cubic meter. The installation consists of three filter columns filled with cation-exchange material, three columns with anion-exchange material EDE-10P, a degasser for removing hydrogen peroxide from the water passing out of the cation columns, cationated water collectors and salt-free water collectors, tanks for holding the recharging acid solution and base, and apparatus for measuring and feeding the acid and base solutions into the tanks, as well as pumps for liquid transference.

Vashkov, V. I.
VERY SIMPLE METHODS OF DISINFECTION, DISINSECTIZATION, AND DERATIZATION. 12 Dec 61 [48]p. 15 refs. JPRS: 11478.
Order from OTS or SLA $4.60 62-15225

Trans. of mono. (pamphlet) [Prosteishie Sposoby Dezinfektsii Dezinsektsii i Deratizatsii] Moscow, 1960 [40]p.

DESCRIPTORS: *Disinfectants, *Pest control, *Infections, Insecticides, *Public health, Sanitary engineering, *Rodenticides.

Simple methods are discussed for decontaminating various objects in order to prevent infectious diseases. Convenient ways are described for controlling insects and rodents which not only cause destruction but also transmit the agents of a great many infectious diseases. Methods are emphasized that can be used at home if someone in the family is ill. In such cases disinfection is carried out by the person who is taking care of the patient.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Pavlov, D. S. and Chesnokov, P. I.
INCREASES OF THE VITAMIN CONTENTS OF RATIONS OF MILITARY PERSONNEL. [1961] 9p.
Order from OTS or SLA $1.10 61-20551

Trans. of Voenno-Meditsinskii Zhurnal (USSR) 1961, no. 2, p. 31-34.
Another trans. is available from OTS $3.00 in 61-31498, JPRS-9303, 19 May 61, 161p.

DESCRIPTORS: *Vitamins, *Military personnel, *Military rations, *Food.

The steps are discussed which insure that as many of the vitamins remain intact as possible during storage and during the time that food articles are handled in military kitchens.

Prilutskii, D. N.
REFRIGERATION ENGINEERING IN THE FISH INDUSTRY: A SOURCE BOOK OF SOVIET LITERATURE, 1922-56. 1961, 44p. 522 refs. PL-480 Int.
Order from OTS $0.50 61-11414

Trans. of mono. Bibliograficheskii Spravochnik: Kholodil'naya Tekhnika v Rybnom Khozyaistve, 1922-56, Moscow, 1957 [45p.].

DESCRIPTORS: *Bibliography, *Fishes, Processing, *Industrial plants, *Refrigeration systems, *Frozen food, *Transportation, Freezing, *Storage, Low temperature research, Food.

Contents:
Technical operation and design of cold storage plants
Refrigeration processing of fish and fish products; refrigeration transport
The technique of production of low temperatures.

Surkov, V. and Shmidt, G.
CENTRIFUGING OF THE BACTERIA CONSTITUTING THE MICROFLORA OF MILK (Tsentrifugirovanie Bakterii Sostavlyayushchikh Mikrofloru Moloka) tr. by M. Salde. [1961] [14]p. (foreign text included) 11 refs. [CSIRO] Trans. no. 5448.
Order from OTS or SLA $1.60 61-28768

Trans. of Molochnaya Promyshlennost' (USSR) 1961, v. 22, no. 2, p. 31-34.

DESCRIPTORS: *Milk, Pasteurization, Purification, *Bacteria, *Centrifuges, Microorganisms.

The importance is demonstrated of the factors characterizing the intensity of the centrifugal field with respect to elimination of such microorganisms as are usually present in milk and develop in it in considerable numbers and which affect its original nutrient and technological properties.

Temper, A. [S]., Bokhanov, B. V. and others.
THE ROLE OF PROPHYLACTIC VITAMIN ADDITIONS TO FOOD IN THE DECREASE OF MORBIDITY. [1961] 6p. (3 tables omitted)
Order from OTS or SLA $1.10 61-20552

Trans. of Voenno-Meditsinskii Zhurnal (USSR) 1961, no. 3, p. 41-51.
Another trans. is available from OTS $3.00 in 61-31504, JPRS-9572, 29 June 61, 169p.

DESCRIPTORS: *Military medicine, *Vitamins, *Military rations, *Food.

The addition of a complex of vitamins A, B and C for hygienical and disease- preventing reasons to the food resulted in a significant improvement of the wellbeing and a lowering of the morbidity and the lost man-hours, especially in diseases of the skin and such affecting subcutaneous tissue.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

REFERATIVNYI ZHURNAL. MASHINOSTROENIE (USSR) 1961, NOS. 1-2, ABSTRACTS 1A349-2S120: SELECTED TRANSLATIONS OF ABSTRACTS OF ARTICLES BY CHINESE AUTHORS, OR PERTAINING TO COMMUNIST CHINA (Soviet Abstracts, Machine Construction). 10 Jan 62 [71]p. JPRS: 11923.
Order from OTS or SLA $7.70 62-15434

Complete translations of Russian-language abstracts of articles originally published in the Sino-Soviet bloc.

DESCRIPTORS: *Machines, Abstracting, Machine tool industry, *Industrial equipment, Forge presses, Metal forming presses, Foundries, Automatic, Control systems, Tractors, Trailers, Textile industry, Chemical engineering, Oils, Refineries, Rolling mills, Power plants, Railroads, Passenger vehicles, Paper industry, Agricultural machinery, Ships Construction.

SCHERBIUS REGULATING UNITS FOR BLOWER AND COMPRESSOR DRIVES. [1961] 12p.
Order from STT $6.00 STT-137-593

Trans. of Brown Boveri Mitteilungen (Switzerland) [1960] v. 47, no. 12, p. 860-867.

DESCRIPTORS: *Blowers, *Compressors, *Control systems.

SOVIET MACHINE BUILDING: SELECTED TRANSLATIONS NO. 67. 5 July 61 [27]p. JPRS: 9592.
Order from OTS or SLA $2.60 61-27086

Trans. of Khimicheskoe Mashinostroenie (USSR) 1961 [v. 3] no. 2, p. 1-6, 9-13, 38-40, 48-49.

DESCRIPTORS: *Machines, *Machine tools, Chemical industry, Pumps, Industrial equipment, Centrifuges.

Contents:
Immediate tasks of chemical machine building
Results of the International Conference of CEMA, by Ya. N. Shashvrina
Fortieth anniversary of the Moscow Institute of Chemical Machine Building, by P. M. Reshchikov
Labyrinth pumps for corrosive substances, by A. I. Golubev and G. M. Freidisman
(Machinery, Fabrications and Accessory Equipment,
Drum-type vacuum filter with magnetic system, by A. I. Maksimov
Centrifuge rotors with welded grate bars and their production technology, by M. M. Abelev and others
New machines, apparatus, and instruments O/RT-3M6 LE separator.

Klingspor, Karl.
GRINDING DISC OR BAND. [1961]5p.(8 figs. omitted).
Order from OTS or SLA $1.10 61-20987

Trans. of German patent 1,692,780, cl. 67c, 1, received 1 Dec 54, registered 17 Jan 55, announced 10 Feb 55.

DESCRIPTORS: *Grinding wheels, *Abrasives, Sheets, Elasticity, Disks, Abrasive coatings, Binders, Grinders.

The abrasive disk or band is characterized by a plurality of individual abrasive elements in the form preferably of elastic sheets, strips or ledges arising in close proximity to one another from the outside surface.

Kuz'ko, Yu. P.
WAYS OF DECREASING THE WEIGHT AND DIMENSIONS OF POWER PRESSES. 18 May 61 [12]p. (1 fig. omitted) MCL-1060/1. AD-259 611.
Order from OTS or SLA $2.60 61-27404

Unedited rough draft trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1959 [v. 1] no. 8, p. 18-21.

DESCRIPTORS: *Metal forming presses, *Forge presses, *Machines, Machine tools, Hydraulic presses

Engines and Propulsion Systems

Miryushchenko, A.
APPARATUS FOR SAMPLING GASES FROM CYLINDERS OF INTERNAL COMBUSTION ENGINES. [1961] 3p.
Order from OTS or SLA $1.10 61-20780

Abstract trans. of Novosti Tekhniki (USSR) 1940, v. 9, no. 21/22, p. 20-22.

DESCRIPTORS: *Internal combustion engines, *Gases, Sampling, Engine cylinders.

Zonshain, S.
THE VELOCITIES THAT ARE POSSIBLE IN THE UNIVERSE. 28 Aug 61 [8]p. MCL-1245/1.
Order from OTS or SLA $1.10 61-28674

Unedited rough draft trans. of Literaturnaya Gazeta (USSR) 1961, 11 May, p. 2, cols. 1-5.

DESCRIPTORS: Velocity, *Photons, *Ion rockets, Solar systems, Galaxies, Planets, *Flight speeds, *Rocket propulsion, Light transmission, *Spaceships, Space flight.

Further penetration into the space of our solar system requires switching over from chemical to atomic energy. Such a switch-over is capable of increasing flight speeds up to 100,000 kilometers per hour. The ion rocket will open up the prospect of flight at speeds up to 500,000 kilometers per hour; this speed is suitable for visiting the distant planets of our solar system, but is still not sufficient to reach interstellar space. In order to overcome the enormous spaces separating us from other galaxies, and time the contradiction between the limited lifetime of man and the long period of time necessary for a trip into interstellar space, the flight speed must be made comparable to the speed of light. This will be possible only by means of the photon (or, as it is also called, the quantum) rocket. (Extracted)

Machine Parts and Mechanisms

Jacobi, H. R.
NEW KNOWLEDGE ON SLIDING PROPERTIES OF POLYAMIDES, PT. 1. [1961] [15]p. (refs. 29 figs. omitted).
Available on loan from SLA 62-10720

Trans. of Kunststoffe (West Germany) 1957, v. 47 [no. 5] p. 234-239.

DESCRIPTORS: *Bearings, Materials, *Polymers, *Amides, Tests, Load distribution, Sliding contacts, Lubrication, Friction, Deformation, Crystal structure, Polymerization, Lactams.

Schmidt, R.
THE BENDING FATIGUE STRENGTH OF MACHINED CRANKSHAFTS AFTER STRAIGHTENING, WITH NOTES ON THE STRESS DISTRIBUTION, OBTAINED BY EXTENSOMETER AND X-RAY DIFFRACTION MEASUREMENTS. [1961] [10]p. 3 refs.
Order from SLA $1.10 61-18465

Trans. of [Deutsche Luftwacht]: Luftwissen (Germany) 1942, v. 9 [no. 9] p. 263-267.

DESCRIPTORS: *Crankshafts, Stresses, Extensometers, X-ray diffraction analysis, *Fatigue (Mechanics).

Ulrich, M.
INCREASING THE FATIGUE STRENGTH OF GEAR WHEELS BY SPECIAL SHAPING, HARDENING AND MACHINING OF THE TOOTH BASE. [1961] [6]p.
Order from SLA $1.10 61-18546

Trans. of [Deutsche Luftwacht]: Luftwissen (Germany) 1942, v. 9, no. 11, p. 311-312.

DESCRIPTORS: Fatigue (Mechanics), *Gears, Hardening, Machining, Stresses.

Manufacturing Equipment and Processes

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS NO. 51. 1 June 61 [23]p. JPRS: 9364.
Order from OTS or SLA $2.60 61-23575

Trans. of Khimicheskie Volokna (USSR) 1961, no. 1, p. 1-2; Promyshlennoe Stroitel'stvo (USSR) 1961 [v. 39] no. 2, p. 2-5; and 17 articles from 16 Soviet newspapers.

DESCRIPTORS: *Chemical industry, Industrial plants, *Synthetic fibers, *Textiles, Production, Quality control, Economics, Construction, Cellulose, Cordage, Ethanols.

Contents:
Results of the activities of the chemical fiber industry in 1960 and the tasks for 1961
Combined installation of structural components and technological equipment in chemical industry plants, by V. Ya. Putintsev
Selected news items.

Balandin, G. F. and Vorobev, Yu. A.
CONTRIBUTION TO THE THEORY OF PACKING FOUNDRY MOLDS [AND] EVALUATING THE PRECISION OF CASTINGS (K Teorii Uplotneniya Litenykh Form [and] Otsenka Tochnosti Otlivok). Repts. presented at the Interinstitutional Scientific-Technological Conference at the Moscow Higher Technical Institute im. Bauman, Jan 58. 10 Jan 61 [26]p. (4 figs. 7 tables omitted) 18 refs. MCL-124/1; AD-257 653.
Order from OTS or SLA $2.60 61-23890

Rough draft trans. of Nauchnye Doklady Vysshei Shkoly. Mashinostroenie i Priborostroemie (USSR) 1958, no. 3, p. 122-131 and 141-148.

DESCRIPTORS: Castings, Scientific reports, Industrial research, *Casting, *Molding materials, Molding, Sand, Clays, Mixtures, Water, Binders, Bonding, Theory, Production, Preparation, Processing, Physical properties, Viscosity, Porosity, Elasticity, Metals, Mathematical analysis, Precision finishing, Machining, Machine shop practice, Standards, Specifications, Alloys.

Packing Foundry Molds, by Balandin: Methods of determining the packing and construction of molding machines are reviewed, based on the relationships between the properties of the mixtures and the internal forces hindering the packing under various external stresses. A general equation is formulated for the packing of the mixture, which reflects the dependence of the density of the mold upon the size of the impulse of the external load. The mold and core mixtures are considered as an elastic-viscous compressible material with pronounced viscous properties. Precision of Castings, by Vorobev: The possibility is considered of extending engineering standards for machining operations to the foundry industry. Conclusions are given concerning the possibility of establishing precision standards for casting of nonferrous alloys.

Butusov, V. P.
ACCELERATING THE BUILDING OF NEW MACHINES. 22 Aug 61 [22]p. MCL-1269/1.
Order from OTS or SLA $2.60 61-28711

Unedited rough draft trans. of Nauchnye Doklady Vysshei Shkoly. Mashinostroenie i Priborostroenie (USSR) 1958, no. 3, p. 15-24.

DESCRIPTORS: *Machines, Industrial research, Design, Production, Standardization, Materials, Metallurgy, Construction, Acceleration, Economics, Research program administration, Machine tool industry, Machine shop practice.

Kapustina, T. P.
GRINDING CERAMIC MATERIALS WITH A FREE ABRASIVE (Shlifovka Keramicheskikh Materialov Svobodnym Abrazivom). Jan 61 [15]p. MCL-781; AD-258 485,
Order from OTS or SLA $1.60 61-23674

Trans. of Steklo i Keramika (USSR) 1960 [v. 17] no. 6, p. 18-21.

DESCRIPTORS: *Ceramic materials, Grinders, *Abrasives, Hardness, Physical properties, Crystal structure, Surface properties, Corundum, Silicon compounds, Carbides, Boron compounds, Machines, Processing, Materials.

Kostyuk, V. A., Dozlov, Yu. M. and others.
INDUSTRIAL UNITS FOR WELDING BY ELECTRON BEAM. 28 Aug 61 [15]p. (5 figs. omitted) 5 refs.
MCL-1177/1; AD-264 518.
Order from OTS or SLA $1.60 61-28486

Unedited rough draft trans. of #Svarochnoe Proizvodstvo (USSR) 1961, no. 1, p. 41-43.

DESCRIPTORS: *Electron beams, Industrial equipment, *Electric welding, Welding, Vacuum apparatus, Electron guns, Manufacturing methods, Heat resistant alloys, Metals.

Two types of automatic industrial units (ELU-1 and ELU-2) for welding workpieces by electron beam in a vacuum are described.

Lazarenko, B. R.
CARBIDE DIES. 11 Oct 61 [7]p. JPRS: 10501.
Order from OTS or SLA $1.10 61-28925

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 4, p. 83-87.

DESCRIPTORS: *Carbide tools, *Dies, Machine tools, Machine tool industry.

Papke, W. H.
LIMITATIONS IN THE EVALUATION OF GAMMA RADIOGRAPHS USED FOR EXAMINING CIRCUMFERENTIAL PIPE WELDS IN ACCORDANCE WITH DIN-54 111. [1959] [14]p. 4 refs.
Order from SLA $1.60 62-10513

Trans. of Schweissen und Schneiden (West Germany) 1958, v. 10, no. 11, p. 439-441.
Another trans. is available from BISI £2 15s as BISI-1391 [1959].

DESCRIPTORS: *Gamma rays, *Welds, *Radiographic analysis, Films, Thickness, Penetration, Density, Welded joints, Non-destructive testing.

For abstract see Technical Translations 2: 590, 1959.

Petrov, Yu. N.
EFFECT OF PLATING CONDITIONS ON THE STRUCTURE AND WEAR RESISTANCE OF IRON ELECTRODEPOSITS [Vliyanie Uslovii Elektroliza na Strukturu i Iznosostoikost' Elektroliticheskikh Zhelenykh Pokrytii]. Jan 60 [3]p. 1 ref. [DSIR NLL] M 1807.
Order from OTS or SLA $1.10 61-13135

Trans. of Metallovedenie i [Termicheskaya] Obrabotka Metallov (USSR) 1958, no. 12, p. 53-56.
Another trans. is available from HB $3.25 as HB-4450, May 59, 1500 words.

DESCRIPTORS: *Electroplating, Coatings, Iron, Chlorine, Electrolytes,

For abstract see Technical Translations 2: 351, 1959.

Ragoss, Alfred, Nedopil, Erich and others.
PROCESS FOR THE PRODUCTION OF PITCH COKE SUITED FOR THE MANUFACTURE OF SHAPED GRAPHITE ARTICLES ESPECIALLY FOR ELECTRODES FROM COAL TAR PITCH. [1961] 9p.
Order from OTS or SLA $1.10 61-20962

Trans. of German patent 1 047 701, cl. 80 b 8/12. Internat. Cl. C 04 b, by Siemens-Planiawerke A. G. fur Kohlefabrikate, appl. 24 Jan 57, made public 24 Dec 58.

DESCRIPTORS: Processing, Production, *Pitch, *Coke, *Coal tar, *Graphite, *Electrodes, Conductivity, Electrical conductance.

The invention represents the removal of the poorly graphitizable constituents (these are the oxygen-, sulfur- or nitrogen- containing, mostly heterocyclic, compounds) in order to obtain a well graphitizable pitch coke. The removal of these interfering constituents from the pitch can be carried out by dissolving the pitch in benzene, toluene, chlorobenzene, dichlorobenzene, anthracene oil, pyridine, quinoline and others. Each solvent has a different solvency. (Extracted)

Schwartz.
DEVELOPMENT TENDENCIES IN GRINDING SYSTEMS. [1961] 27p. (16 figs. omitted).
Order from SLA $2.60 61-20880

Trans. of Zellstoff und Papier (Germany) 1959, v. 8, no. 12, p. 455-464.
Another trans. is available from SLA $1.60 as 61-18570, June 61, 14p.

DESCRIPTORS: *Wood pulp machines, *Grinders, *Paper industry, Applied mechanics, Industrial research, Manufacturing methods, Design, Costs, *Grinding wheels, Machine tools, *Ball mills

High speed paper machines require a large content of flexible long fibres together with a small amount of farinaceous stuff, obtainable only with one pocket grinders because of controllable production methods. In all multipress grinders fibre masses are drawn into the next grinding zone resulting in fibre destruction. Use wood as moist as possible, high grinding temperature, chest stuff consistence between 2 and 2.5%. Depth of stone immersion depends on stone surface. Before going over to sharpening, clean clogged stone surfaces first by strong jets of water of about 5 atm or with brushes. Adapt burring to the quality of the wood fibre and grit of stone, using, if necessary, two different types of burring rolls. Check every half hour the buffed material in the thickener and every three hours

each grinder in respect of grinding degree, contents of slivers and fibrillation, the latter by an Obkircher image tester. Use as additional water only clarified waste water from the paper mill. (Author) (Paper read at the Fifth Technical-Science Meeting of the Chamber of Technology, Branch of the Polygraphy Association for the Cellulose and Paper, as well as the Printing and Paper-making Industries, held in Leipzig from 23rd to 25th April, 1959.)

Suvorov, A. M.
[MAKING SHAPED CASTINGS WITH SILICON] tr. by Elena Wolkonsky. [1961] 8p. (3 figs. omitted). H-4974.
Order from OTS $0.50 61-21958

Trans. of Liteinoe Proizvodstvo (USSR) [1959, no. 3, p. 14-16].

Portions of this report will not reproduce well.

DESCRIPTORS: *Silicon, *Castings, Production, Manufacturing methods.

The possibility was established of the production of shaped items made out of crystalized silicon and a method for their manufacture was developed.

Tovmasyan, S. S.
AUTOMATION AND THE PROBLEM OF THE OCCUPATIONAL DIVISION OF LABOR. 8 Nov 60, 13p. JPRS: 6212.
Order from OTS $0.50 61-11002

Trans. of Akademiya Nauk Armyanskoi SSR, Erevan. Izvestiya. [Obshchestvennye Nauki] 1960, no. 3, p. 35-46.

DESCRIPTORS: *Automation, *Labor, Industrial production, Machines, Technological intelligence.

Transport, Traction and Hoist Facilities

Barth, Robert.
INVESTIGATIONS OF THE CARBON MONOXIDE CONTENT OF THE AIR IN MOTOR VEHICLES (Untersuchungen über den Kohlenoxydgehalt der Luft in Kraftfahrzeugen). [36]p. (foreign text included) 5 refs.
Order from SLA $3.60 61-20083

Trans. of Deutsche Kraftfahrtforschung und Strassenverkehrstechnik (West Germany) 1960, no. 142, p. [3]-12.

DESCRIPTORS: *Carbon compounds, *Monoxides, Chemical analysis, Air, Exhaust gases, Vehicles, *Passenger vehicles, Ventilation, Safety, *Internal combustion engines, Gases, Analysis.

During experiments made under defined conditions whilst running, samples were taken of the inside air in series production motor vehicles and the CO content thereof determined. In so doing, due consideration was given to the influence of the arrangement of the exhaust of the heating system and any leaks, the speed of travel (load imposed upon the engine), the surrounding atmosphere and the pressure conditions occasioned by the air stream created. (Author)

Briker, M. L.
NEW DEVICES FOR CLEANING THE OIL- FUEL- AND AIR—FILTERS OF A DIESEL LOCOMOTIVE (Novye Ustroistva dlya Ochistki Maslyanykh, Toplivnykh i Vozdyshnykh Filtrov Teplovoza) tr. by D. R. H. Phillips. 9 Sep 60 [7]p. (foreign text included). Trafford Park trans. no. 2690; [DSIR NLL] M. 2664.
Order from OTS or SLA $1.10 61-28459

Trans. of Elekt[richeskaya i] Teplovoz[naya] Tyaga (USSR) 1959, no. 4, p. 44-45.

DESCRIPTORS: Cleaning, *Oil filters, *Fuel filters, *Diesel engines, Locomotives, *Air intake filters, Centrifuges, Electrical equipment.

Dolmatovskii, Yu. A.
ABOUT THE SELECTION AND EVALUATION OF TIRE PARAMETERS. [1961] [12]p. F-TS-9329/III.
Order from OTS or SLA $1.60 61-28432

Trans. of Avtomobil'naya Promyshlennost'. (USSR) 1956, no. 5, p. 13-15.

DESCRIPTORS: *Tires, Selection, Load distribution, *Passenger vehicles, *Vehicle wheels, Pressure, Automotive industry.

Formulas and nomograms are introduced that permit proper selection of tire dimensions for new automobiles, the evaluation of the existing tires and the use of a pressure in the tires corresponding strictly to their characteristic.

Gel'fenbein, S.
REMOTE CONTROL AND AUTOMATION OF TRACTOR DRIVING (Avtomatizatsiya Dvizheniya Traktorov). [1960] 6p. PL-480 Agr.
Order from OTS $0.50 60-51064

Trans. of Tekhnika v Sel'skom Khozyaistve (USSR) 1960 [v. 20] no. 1, p. 25-27.

DESCRIPTORS: *Tractors, Automation, Remote control systems, Control systems, Tests.

MATERIALS

INDUCTION STOVING OF PAINTED METAL PARTS. Feb 60 [2]p. 1 ref. [DSIR NLL] M1806.
Order from OTS or SLA $1.10 61-13134

Reprint (?) from an unidentified Eng. source, Feb 60, summarizing work reported by N. I. Dorofeeva and N. N. Anyani in Avtomobil'naya Promyshlennost' (USSR) 1959, no. 9, p. 35-36.

DESCRIPTORS: Metals, Finishes, *Paints, Drying, Heat treatment, *Induction heating, Automotive industry, Manufacturing methods.

A conveyor-type installation with induction heating for stoving painted headlamp shells has been described. The output of the 27 foot long unit is 900 parts per hour. Consumption of the 8,000 c/sec current per part is 0·13 kWh as compared with 0·64 kWh for continuous convection radiant oven stoving. At the same time, stoving time is reduced from 35-45 minutes for oven stoving to 2-4 minutes for induction stoving. (Translator)

Chefdeville, Jean and Dawance, Guy.
THE USE OF ELECTRICAL RESISTANCE STRAIN GAUGES IN MEASURING DEFORMATIONS IN PLAIN AND REINFORCED CONCRETE. [1961] 29p.
Order from SLA $2.60 61-20029

Trans. from Centre Scientifique et Technique du Bâtiment [Paris]. Cahiers (France) 1950, v. 52, no. 5.

DESCRIPTORS: *Strain gages, Resistance, *Concrete, *Reinforced concrete, Deformation, Gages.

Fritz, Alfred and Gruschwitz, Friedrich.
CENTRIFUGAL PLASTERING DEVICE (INCLUDING AUSLEGESCHRIFT FOR THE PATENT) tr. by P P. C. C. 26 Oct 61 [10]p. (2 figs. omitted) 2 refs.
Order from OTS or SLA $1.10 61-28964

Trans. of German patent 1,013,861, cl. 37d, gr. 32/02, internat. cl. E 04f, appl. 4 Oct 54, appl. announced and laid open to inspection 14 Aug 57, pub. 17 Apr 58.

DESCRIPTORS: *Mortar, Construction, Materials, Effectiveness.

The invention relates to a mortar receptacle in the form of a scoop, the spray roller being mounted in a lateral opening of the lower nozzle-shaped portion of the receptacle. The front wall of the mortar receptacle is preferably provided with a reinforced filling edge and with a bulge adjacent to said edge. In order to plaster ceilings an easily mounted sheet metal plate preventing a flow of the mortar out of the receptacle is provided between the rear wall and the two side walls of said receptacle. The spray roller consists of a round brush carrying steel wire or plastic bristles and driven by a high speed small motor through a flexible shaft. A longitudinally movable control plate determining the amount of material carried along by the roller is mounted above said spray roller in the receptacle. (Extracted)

Gogoleva, T. Ya. and Stepanenko, M. A.
SURFACE TENSION, DENSITY AND VISCOSITY OF COAL-TAR PITCH. [1961] [10]p.
Order from OTS or SLA $1.10 61-20924

Trans. of Koks i Khimiya (USSR) 1959, no. 4, p. 42-45.

DESCRIPTORS: Surface tension, Density, Viscosity, *Coal tar, *Pitch.

Guyon, M. Y.
A STUDY OF CONTINOUS BEAMS AND OF SOME STATICALLY REDUNDANT SYSTEMS IN PRESTRESSED CONCRETE. Mar 51, [116]p. 32 refs.
Order from SLA $9.60 61-20092

Trans. from Institut Technique du Bâtiment et des Travaux Publics, Paris. Circulaire serie J [sic] (France) 1945, no. 8.

DESCRIPTORS: *Concrete, *Beams, Pressure, Structures, Mathematical analysis.

Konovalov, P. F., Efremov. A. I., and Volkonskii, B. V.
IONIZATION X-RAY EQUIPMENT FOR RESEARCH ON CRYSTALLINE MATERIALS AT VARIOUS TEMPERATURES, by Y. Shechtman. 1961, 102p.
PL-480 Int.
Order from OTS $1.00 60-51136

Trans. of mono. Ionizatsionnaya Rentgenostrukturnaya Ustanovka Dliya Issledovaniya Kristallicheskikh Veshchestv pri Razlichnykh Temperaturakh, Leningrad 1958 [133]p.

DESCRIPTORS: *Industrial research, *Scientific research, Structures, Mathematical analysis, *X-rays, *Ionization, *Construction materials industry, Metals, Temperature.

This publication gives detailed scientific and technological information on the design, application and use of equipment for ionization X-ray structural analysis, as an efficient method for research necessary in the study of the structure of building materials, metals and other materials. The information is intended aid wide circles of workers in industry and in scientific research institutes, and also students in institutions of higher education. (Soviet publisher's note)

Manche, H.
NOTE ON THE DURATION OF VIBRATION OF CONCRETE. [1961] 7p.
Order from SLA $1.10 61-18996

Trans. of Revue des Materiaux de Construction et de Travaux Publics. [Edition C] (France) 1950, no. 415, p. 148-150.

DESCRIPTORS: *Concrete, Vibration, Mechanical properties.

This paper is a report on the results of experiments carried out to determine the most advantageous duration of vibration of concrete, i.e., the duration of compacting by vibration which is necessary and sufficient to ensure the maximum strength of concrete made under the conditions outlined in the paper. These experiments also provide information on: The effects on the strength of concrete of excessive or insufficient vibration. The extent to which it is possible to deviate from the most advantageous duration of vibration without appreciably affecting the strength of the concrete. (Author)

Moroz, I. K. and Satarin, V. I.
BRIEF REVIEW OF THE CEMENT INDUSTRY IN THE UNITED STATES. [1961] 7p.
Order from OTS or SLA $1.10 61-20554

Trans. of Tsement (USSR) 1961 [v. 27] no. 2, p. 29-31

DESCRIPTORS: *Cements, Production, Construction materials industry.

Nylander, Henrik and Sahlin, Sven.
INVESTIGATION OF CONTINOUS CONCRETE BEAMS AT FAR-ADVANCED COMPRESSIVE STRAINS IN CONCRETE. [1961] [35]p. 4 refs.
Order from SLA $3.60 61-18992

Trans. of Betong (Sweden) 1955, v. 40, no. 3, p. 241-275.

DESCRIPTORS: *Concrete, *Beams, Fracture (Mechanics), Stresses, Load distribution, Failure (Mechanics), Rupture, *Reinforced concrete, Elasticity.

The central span moments did not decrease to any catastrophic extent when the compressive edge strains increased to 4 or 5%. Although the concrete cracked in the outer portions of the beam in the part with negative moment, the load-bearing capacity of the cross-section was far from being exhausted. The stiffness (properly the deflexions under the concentrated loads) of the beams does not decrease to any substantial extent until the load reaches 80 to 90% of its ultimate value. The tests showed that large compressive edge strains of concrete involve an increased risk of rupture in shear and fracture of anchorage because the internal lever arm becomes smaller. This circumstance should be taken into consideration in applying the method of limit design.

Presnov, V. A. and Yakubenya, M. P.
INVESTIGATION OF THE STRUCTURE OF THE TRANSITION REGION OF THE CERAMIC-TO-METAL SEALING (Issledovanie Struktury Perekhodnoi Oblasti v Spae Keramiki s Metallom). [1961] [45]p. (foreign text included) 3 refs.
Order from OTS or SLA $4.60 61-20835

Trans. of Sibirskii Fiziko-Tekhnicheskii Institut. Trudy (USSR) 1958, v. 36, p. 159-171.

DESCRIPTORS: Phase transitions, Cermets, *Ceramic materials, Metallurgy, Chemical reactions, *Metals, Oxides, *Seals.

We confirmed experimentally the concept that the uniting of materials of different kinds, like a ceramic and a metal, occurs only under such conditions that an acid- base reaction takes place between and among the corresponding oxides. For the manufacture of vacuum-tight ceramics, when they are metallized with Mo, it is required that a controlled gas atmosphere is present, so that the layer of Mo, which is laid down upon the ceramic, becomes oxidized, but to the lower oxides only, which are the more basic ones. The lower oxides of Mo react with the acid oxides of the ceramics, like SiO_2 and B_2O_3, so that the silicates and the borates of Mo, resp., are formed; the latter ones will be found in the composition of the ceramic there where it has contact to the metal, and in this way the transition region is formed. The Mo oxides can react with the silicates in the ceramic under formation of polysilicates. For the metallization of a ceramic which shows basic properties one must employ a metal which upon deposition upon the ceramic becomes oxidized to an oxide of higher valence. (Author)

Ceramics and Refractories

Chernyak, M. G.
TECHNICAL PROBLEMS IN PRODUCTION OF GLASS FIBERS AND REINFORCED PLASTICS [Nekotore Tekhnicheskie Problemy v Proizvodstve Steklovolokna i Stekloplastikov]. [1961] [9]p. (4 figs. omitted).
AERDL T-1010; RIS E 688.
Order from OTS or SLA $1.10 61-28944

Trans. of #Steklo i Keramika (USSR) 1960, v. 17, no. 2, p. 28-31.
Unedited rough draft trans. available from OTS or SLA $1.60 in 61-27406, MCL-663/1-2, AD-257 683, 17 Feb 61 [14]p.; also available from RIS $16.00 as RIS E-688.

DESCRIPTORS: *Glass textiles, *Plastics, Insulating materials, Thermal insulation, Acoustic insulation, Electric insulation, Production, Industrial production, Borohydrides, Substitutes, *Ceramic materials, Esters, Polymers, Economics, Porous materials.

Jebsen-Marwedel, H. and Dinger, K.
ROLE OF THE SURFACE TENSION IN THE FUSION OF GLASS [Role de la Tension Superficielle dans la Fusion du Verre]. [1961] 6p. (13 figs. [10 refs] omitted)
Order from SLA $1.10 62-10545

Trans. of Institut du Verre. Bulletin (France) 1946, no. 5, p. 15-21.
Another trans. is available from SLA mi$2.40, ph$3.30 as 60-18772 [1960] [18]p.

DESCRIPTORS: Fused materials, *Glass, *Surface tension, Melting, Manufacturing methods.

For abstract see Technical Translations 5: 82, 1961.

Keler, E. K. and Zegzhda, V. P.
PRODUCTION OF REFRACTORIES FROM SOFT-FIRED GROG. June 47 [44]p. 11 refs. BCRA Trans. no. 166; [DSIR LLU] M 1395.
Order from OTS or SLA $7.80 61-13007

Abridged trans. from Vsesoyuz[nyi Gosudarstvennyi] Inst[itut Nauchno-Issledovatel'skikh i Proektnykh Rabot] Ogneupornoi [Promyshlennosti, Leningrad]. Trudy (USSR) 1940, no. 19.

DESCRIPTORS: Production, *Refractory materials, *Clays, Blast furnaces, Water, Mixtures, Temperature, Fracture (Mechanics), Properties.

Fuels, Lubricants, and Hydraulic Fluids

Astakhov, I. V.
THE COMPRESSIBILITY OF MOTOR FUELS. 28 Aug 61 [17]p. 8 refs. MCL-1288/1+2; AD-264 506.
Order from OTS or SLA $1.60 61-28499

Unedited rough draft trans. of Energomashinostroenie (USSR) 1960 [v. 6] no. 9, p. 8-11.

DESCRIPTORS: *Compressible flow, *Fuel oil, Gasoline, Fuels, Diesel engines, Internal combustion engines, Density, Pressure, Viscosity, Velocity, Propagation, Numerical analysis, Kerosene.

An examination is made of the results of experiments to determine the rate of propagation of the pressure wave and the coefficient of compressibility of motor fuels. The results of the experiments of other researchers coincide with the author's data. Some practical suggestions are made. (Author)

Berglund, T.
COLD ROLLING LUBRICATING OILS: CONDITION OF OILS DURING ANNEALING OF STEEL AND THEIR CHEMICAL AND PHYSICAL PROPERTIES. [1961] 18p. (Eng. summary omitted).
Order from SLA $1.60 61-20556

Trans. of Jernkontoret, Stockholm. Annaler (Sweden) 1961, v. 145 [no. 1] p. 25-46.

DESCRIPTORS: *Lubrication, *Oils, Annealing, Steel, Chemical properties, Physical properties, Friction, Reduction.

Dobryanskii, A. F., Sivertsev, A. P., and Fridman, I. Ya.
DETERMINATION OF THE VISCOSITY OF OILS AT LOW TEMPERATURES. [1961] 9p.
Order from OTS or SLA $1.10 61-18137

Trans. of mono. Soveshchanie po Vyazkosti Zhidkostei i Kolloidnykh Rastvorov (Conference on Viscosity of Liquids and Colloidal Solutions) 12-13 May 41, v. 1, Moscow/Leningrad, 1944, p. 173-180.

DESCRIPTORS: Determination, Viscosity, *Oils. Temperature.

Kusakov, M. M. and Krym, K. S.
TRIBOMETER WITH AN ELASTIC AXIS FOR MEASURING KINETIC FRICTION UNDER CONDITIONS OF BOUNDARY LUBRICATION. [1961] 13p. (1 fig. omitted) 16 refs.
Order from OTS or SLA $1.60 61-20191

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh [Nauk]. Izvestiya, 1944, p. 275-287.

DESCRIPTORS: *Friction, Measurement, Lubrication, Lubricants.

Rebinder, P. A., Boguslavskaya, N. A., and Mokievskii, V. B.
INVESTIGATION OF ANOMALOUS VISCOSITY OF LUBRICANTS AT LOW TEMPERATURES. [1961] 5p.
Order from OTS or SLA $1.10 61-18132

Trans. of mono. Soveshchanie po Vyazkosti Zhidkostei i Kolloidnykh Rastvorov (Conference on Viscosity of Liquids and Colloidal Solutions) 12-13 May 41, v. 2, Moscow/Leningrad, 1944, p. 173-177.

DESCRIPTORS: Viscosity, *Lubricants, *Low temperature lubricants, Temperature.

Ulrich, Fritz and Wittig, Hermann.
CONCERNING THE OXIDATION OF COARSE COAL FOR REDUCTION OF COKING PROPERTIES. [1961] 22p. 5 refs.
Order from SLA $2.60 61-20931

Trans. of [GWF]: das Gas- und Wasserfach (West Germany) 1959, v. 100, no. 13, p. 309-317.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 as 60-17595 [1960] 24p.

DESCRIPTORS: Oxidation, *Coal, Reduction, Coke, Temperature, Heat of reaction.

Varentsov, V. P.
EMPLOYMENT OF VISCOMETRY FOR CHARACTERIZING THE PROPERTIES OF GREASES. [1961] 11p. 3 refs.
Order from OTS or SLA $1.60 61-18138

Trans. of mono. Soveshchanie po Vyazkosti Zhidkostei i Kolloidnykh Rastvorov (Conference on Viscosity of Liquids and Colloidal Solutions) 12-13 May 41, v. 1, Moscow/Leningrad, 1944, p. 197-210.

DESCRIPTORS: *Greases, Viscosity, *Viscosimeters.

Yablonskii, V. S.
MIXING OF OIL PRODUCTS IN SUCCESSIVE PUMPING THROUGH THE SAME PIPE LINE. [1961] [7]p. 8 refs.
Order from OTS or SLA $1.10 61-20169

Trans. of Neftyanoe Khozyaistvo (USSR) 1946 [v. 24] no. 2, p. 56-64.

DESCRIPTORS: Turbulent flow, *Pumps, Pipes, *Oils, Petroleum, *Transportation, Fluid flow, Mathematical analysis, Viscosity, *Fuel oils.

A mathematical analysis of the problems encountered in consecutive pumping of a series of oil products through a pipeline and results of experimental work on these problems are reported, referring both to stream line and turbulent flow. A method is outlined for determination of the change of concentration of the individual oil products treated, the effect of the character of the flow and of a number of other factors, as well as of the tolerable extent of contamination, i.e., the percentage of one oil product in the other. (Author)

Alekseenko, V. N.
METHODS OF CREATING PELLICULAR MATERIALS AND ARTIFICIAL LEATHER. 2 Oct 61 [15]p. 16 refs
JPRS: 10387.
Order from OTS or SLA $1.60 61-28927

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 4, p. 73-82.

Portions of this report will not reproduce well.

DESCRIPTORS: *Artificial leather, Leather, Production.

Fainberg, E. Z., Gorbacheva, V. O., and Mikhailov, N. V.
RESEARCH ON THE MOLECULAR STRUCTURE OF SYNTHETIC FIBERS. XIII. POLYENANTHAMIDE. [1961] [5]p. 8 refs.
Order from OTS or SLA $1.10 61-20638

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1, no. 1, p. 17-20.
Another trans. is available from ATS $8.65 as ATS-51M38R [1960] 5p.

DESCRIPTORS: Molecular structure, *Synthetic fibers, Materials, Amides, Properties.

An X-ray and thermochemical study was conducted of polyenanthamide samples and the results were compared with corresponding values for polycaproamide. In comparison with polycaproamide, polyenanthamide crystallizes more easily, owing to which the derivation of amorphous modification is difficult. What has been observed in the orientation process of the enenthic fibre as the increase in the dimensions of the crystals can be explained by double principles: (1) turning the crystal particles and not melting them in the orientation process; (2) a higher rate of crystallization in comparison with the orientation rate, which should contribute to the increase in the density of the packing of the molecular chains. The different character of the change in the heat capacity and heat effects of the polyenanthamide solution depending on the degree of orientation of the fibre indicates a divided appearance of polar and non-polar groups in the molecular chains of polyenanthamide. (Author)

Geller, A. A. and Pakshver, A. B.
INVESTIGATION OF A PROCESS OF DYEING OF A POLYACRYLONITRILE FIBER, COMMUNICATION 1 [1961] 7p. 8 refs.
Order from OTS or SLA $1.10 61-20709

Trans. of Khimicheskie Volokna (USSR) 1959, no. 6, p. 15-17.
Another trans. is available from ATS $9.00 as ATS-89M46R [1960] 5p.

DESCRIPTORS: *Synthetic fibers, Colors, *Dyes, Effectiveness, Textiles, *Acrylonitriles, *Polymers, Processing, Fibers.

It is shown that upon formation, stretching, finishing and drying of the fiber a marked tightening of the structure occurs which is expressed in the sharp decrease of the diffusion coefficient of dyes within the fiber. Simultaneously with the decrease in speed of absorption of dye at the time of plastic stretching of polyacrylonitrile fiber there is an increase in the equilibrium amount of absorbed dye. The supposition is expressed that at the time of stretching, finishing and drying of the fiber there occurs a decrease in the size of internal pores and canals; besides this, the stretching leads to the formation of new pores and an increase in the active internal surface of the fiber.

Glasionova, T. M. and Romanova, A. M.
INVESTIGATION OF THE PROCESS OF SLIVER REMOVAL WITH THE COMB ON THE CARDING MACHINE (Issledovanie Protsessa S'ema Vatki Grebnem na Chesal'noi Mashine) tr. by M. Slade. [1961] [20]p. (foreign text included) 4 refs. [CSIRO] Trans. No. 5327.
Order from OTS or SLA $1.60 61-28647

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tekhnologiya Tekstil'noi Promyshlennosti (USSR) 1960 [v. 4] no. 3, p. 57-65.

DESCRIPTORS: *Fibers, Textile industry, Processing, Manufacturing methods.

High-speed filming of the process of removal of the sliver by the comb demonstrated that, whatever modification of the work of the comb is used, a return of sliver with the rising comb takes place. This phenomenon reduces the take-off capacity of the comb. The amount of sliver return decreases when an electrically polished comb plate is used. An increase in the oscillation amplitude of the comb increases its take-off capacity because the take-off arc σ_c and the feed of sliver by the doffer during the take-off period ($v_\sigma t_c$) increase proportionally to the oscillation amplitude while the amount of return remains practically constant. An increase in the absolute speed of the doffer increases the length of the removed strip because of an increase in the feed by the doffer during the take-off period. This also takes place when the relative speed of the comb in relation to the doffer is reduced. Increase in draft between the doffer and pressure rollers (from 1.035 to 1.22) increases the length of the removed strip from (18.4 to 22.2) because it reduces the return of sliver and increases the take-off arc of the comb. Work in the lower position of the comb reduces the length of the removed strip because it greatly increases the returned length of sliver (16.9 mm instead of 11.4).

Huffman, William Allen Hooper and Wagner, William Sherwood.
DYEABLE MODIFIED POLYESTERS. [1961] 42p.
Order from OTS or SLA $4.60 61-20710

Trans. of Belgian patent 572,649, by Chemstrand Corp., filed 4 Nov 58, granted 29 Nov 58, opened to inspection 28 Feb 59 (priority: U. S. patent applications filed 4 Nov 57, nos. 694,115; 694,116; 694,121).

DESCRIPTORS: *Esters, *Polymers, *Dyes, *Fibers, Molecular weight, Acetates, Reagents, Sulfonic acids, Textile industry.

A general object of the invention is to obtain fiber-forming polyesters of high molecular weight, modified and improved, which have improved dyeing characteristics, notably an increased affinity for dyestuffs, especially for disperse acetate dyes and basic dyes, polyesters which equally have an interesting balance of other advantageous physical properties, notably a high melting point and (high) tenacity. In a general manner the process used to improved the affinity to dyestuffs of the polyesters for the disperse acetate dyes and the basic dyes consists of carrying out the preparation of the polyester in the presence of a small quantity of a mono- or difunctional reagent which has a sulfonic acid group or a group yielding sulfonic acid and one or two functional or reactive groups such as hydroxyl or carboxyl groups and their esters. By this technique modified polyesters can be produced which not only possess an improved affinity toward disperse acetate dyes and can be dyed with basic dyes under temperature and pressure, or both, with carriers, but equally have the necessary molecular weight for fiber-forming polyesters and excellent physical properties in the fiber form. Another object of the invention is to obtain modified polyesters which are easily dyed with basic dyes without requiring carriers or elevated temperature and pressure. Still another object is to obtain a new, improved process for the preparation of improved modified polyesters. (Extract)

Kevorkyan, A.
THE EFFECT OF TWIST ON THE TENACITY AND ABRASION RESISTANCE OF MAN-MADE YARNS, tr. by I. Gawronska. Dec 60, 13p. 4 refs. Courtaulds Misc. Lit. 3237; [DSIR NLL] M. 2949.
Order from OTS or SLA $1.60 61-23381

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Tekh[n]ol[ogiya] Tekstil['noi] Prom[yshlennosti] (USSR) 1960 [v. 4] no. 2, p. 9-16.

DESCRIPTORS: *Threads, *Abrasion, Resistance, *Textiles, Textile industry.

Theoretical and experimental investigations are described that made possible the assessment of the effect of twist on the physico-mechanical properties of man-made multiple yarns and to deduce formulae for determining the tenacity of the twisted yarns. (Author)

Nestelberger, Franz.
THE USE OF METAL BATHS IN TEXTILE PROCESSING. [1961] [16]p. 14 refs.
Order from SLA $1.60 61-20702

Trans. of Melliand Textilberichte (West Germany) 1951, v. 32, p. 955-958.

DESCRIPTORS: *Textiles, Processing, Heat treatment, Heat transfer, *Fibers, *Dyes, Aluminum, Metallic textiles.

Roup.
UTILIZATION OF EPOXY RESINS IN THE TEXTILE INDUSTRY. [1961] 6p.
Order from SLA $1.10 61-20679

Trans. of Veda a Vyzkum v Prumyslu Textilnim (Czechoslovakia) 1958, v. 4, p. 73ff.

DESCRIPTORS: *Epoxy resins, *Textile industry, Plastics, Textiles.

Swillens, P.
PROPERTIES OF THE Z 54 POLYNOSIC FIBER [Les Proprietes de la Fibre Polynosique Z. 54]. 13 July 60 [8]p.
Order from SLA $1.10 61-16728

Trans. of Rayonne [et Fibres Synthetiques] (Belgium) 1960, v. 16 [no. 2] p. 141-144.
Another translation is available from SLA mi$1.80, ph$1.80 as 61-10284 [1960] 5p.

DESCRIPTORS: *Synthetic fibers, Textiles, Production, Cellulose, Cotton, Elasticity, *Rayon fibers, Fibers.

Zhokhovskii, V. V.
AN APPARATUS FOR DETERMINING THE STRAIGHTNESS OF FIBERS IN SLIVER AND ROVING (Pribor dlya Opredeleniya Raspryamlennosti Volokon v Lente i Rovnitse) tr. by M. Slade. [1961] [12]p. (foreign text included) 5 refs. [CSIRO] Trans. no. 5326.
Order from OTS or SLA $1.60 61-28646

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tekhnologiya Tekstil'noi Promyshlennosti (USSR) 1960 [v. 4] no. 2, p. 46-50.

DESCRIPTORS: *Fibers, Test equipment, Determination, *Textile industry, Instrumentation

With the apparatus the straightness of the fibres can be determined without their being pulled from the sliver. The tests with this instrument are very simple, they require no particular skill, and they take only 30-40 minutes, whereas the other known methods take hours. Increments in the length of the sliver can be determined with an accuracy of 0.01 mm.

Photographic Materials

Avramenko, L. F., Vilenskii, Yu. B. and others.
STABILIZATION EFFECT OF THIAZOLOTETRAZOLES AND BENZOTHIAZOLOTETRAZOLES ON SILVER CHLORIDE PHOTOGRAPHIC EMULSIONS. [1961] 2p. 6 refs.
Order from OTS or SLA $1.10 61-20061

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografi i Kinematografii (USSR) 1960, v. 5, no. 4, p. 294-295.

DESCRIPTORS: *Photographic emulsions, Stabilization, *Silver compounds, *Chlorides, Thiazoles, Azoles, Sensitivity.

Thiazolotetrazole and its substituted compounds (4- and 5-methyl-, 4, 5-dimethyl- and 4, 5-tetramethylene-) do not stabilize silver chloride emulsions and they increase the fog. 4-Phenylthiazolotetrazole has a slight stabilizing property. Benzothiazolote-

trazole and its 6-fluorine-, chlorine-, bromine-, phenyl-, methyl-, tetrabutyl-, and acetamino-derivatives and also 6, 7-phenylene-derivatives strongly stabilize the silver chloride emulsions and reduce fog. The desensitizing properties of these compounds are expressed in various degrees. An increase in pH of the emulsion was accompanied by an increase in the stabilizing and antifogging effect of 6-methoxybenzothiazolotetrazole. This compound also inhibits the crystallization process during ripening of the emulsion if it occurs at high pH.

Cassiers, P. M.
ELECTROPHOTOGRAPHY. [1961] 13p. 62 refs.
Order from SLA $1.60 61-18675

Trans. of [Industrie Chimique Belge] 1960, v. 25, no. 2, p. 127-132.

DESCRIPTORS: *Electrophotography, Electrostatics, Sensitivity.

The electrolytic and electrostatic methods of electrophotography are described. A brief historic review precedes a discussion of the mechanism and the commercial applications of the two systems. (Author)

Fridkin, V. M.
CONVENTIONS AND CONFERENCES: SYMPOSIUM ON THE PHYSICAL PRINCIPLES OF THE ELECTROPHOTOGRAPHIC PROCESS. 15 Sep 61, 4p. AID rept. 61-133; AD-265 371.
Order from OTS or SLA $1.10 61-28799

Abstract trans. of Uspekhi Fizicheskikh Nauk (USSR) 1961, v. 74, no. 3, p. 567-570.

DESCRIPTORS: *Electrophotography, Photography, Symposia.

Fridkin, V. M. and Zheludev, I. S.
PHOTOELECTRETS AND THE ELECTROPHOTOGRAPHIC PROCESS. Nov 61, approx. 200p.
Order from CB $12.50

Trans. of mono. [Fotolektrety i Elektrofotograficheskii Protsess, Moscow, 1960, 20op.].

DESCRIPTORS: *Electrophotography, *Electrets.

Levina, P. I. and Veidenbakh, V. A.
INVESTIGATION OF VARIOUS DEVELOPERS. Pt. 3 of Effect of Developer Concentration on Fast Development. [1961] 8p.
Order from ATS $15.95 ATS-97N52R

Trans. of Zhur[nal] Nauch[noi] i Priklad[noi] Fot[ografii] i Kinematografii (USSR) 1960, v. 5, no. 5, p. 334-342.

DESCRIPTORS: *Photographic chemicals, Photographic film.

Lyalikov, K. S. and Semenchenko, I. V.
POLARIZATION ABSORPTION SPECTRA OF SOME CYANINE SENSITIZING DYES. [1961] 11p. 14 refs.
Order from OTS or SLA $1.10 61-20064

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 161-167.

DESCRIPTORS: *Polarization, *Absorption, *Spectrographic analysis, *Dyes, Sensitivity, *Vinyl radicals, *Acetates, *Vinyl alcohol.

The dyes studied were 1, 1'-diethylquino-(2, 2')-cyanine chloride (I), and 3, 3'-dimethyl-9-ethyl-4, 5, 4', 5-dibenzothiacarbocyanine iodide (II). The polarization absorption spectra of stretched films made of polyvinyl alcohol and weakly dyed with 1, 1'-diethylquino-(2, 2')-cyanine chloride (I) or pinacyanol show that the molecules of these dyes absorb light mostly with $\vec{E}$ parallel to the long axis of the molecule. The measured dichroism of absorption bands within the visible region is fairly close to unity. Within the ultraviolet region the measured dichroism for Dye I is lower than within the visible region. J-aggregates of the dye, for which an intense absorption band is a characteristic feature, are formed in films made of polyvinyl alcohol and polyvinyl acetate and colored with Dye I in concentrations of the order of 0.1 mole/dm^3. Dye II does not form any J-aggregates in the films made of polyvinyl acetate. When films colored with Dye I and II were stretched, it was observed that the maxima of J-bands moved towards shorter wave-lengths by approximately 100 cm^{-1}.

Rodicheva, M. F.
THE COMPOSITION OF K, Ya-2, AND T-3 NUCLEAR EMULSIONS BY ELEMENTS. [1961] 2p.
Order from OTS or SLA $1.10 61-20063

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 221.

DESCRIPTORS: *Photographic emulsions, Chemical analysis, Carbon, Nitrogen, *Hydrogen, Chemical bonds, Chemical elements.

The content of silver halide in the K, Ya-2, and T-3 nuclear emulsions which were put on the market in 1958, was determined gravimetrically. The content of carbon and hydrogen was determined microanalytically for all types of emulsions, and the content of nitrogen was calculated by a combination of Duma's microtechnique and Kjeldahl's macrotechnique. (Author)

Sheberstov, V. I.
INVESTIGATION OF THE THERMAL RELATIONSHIPS OF PHOTOGRAPHIC DEVELOPMENT. V. SOME METHODICAL PROBLEMS OF DETERMINATION OF THE DEVELOPMENT ACTIVATION ENERGY OF PHOTOGRAPHIC EMULSIONS. [1961] 15p. 15 refs.
Order from OTS or SLA $1.60 61-20071

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 173-182.

DESCRIPTORS: *Photographic emulsions, Chemical reactions, Molecules, Silver compounds, Holides, Diffusion, Particles, Oxidation, Reduction.

(See also 61-18311)

Plastics

INNOVATIONS IN SYNTHETIC RESIN COMPOUNDS. [1961] 7p.
Order from OTS or SLA $1.10 61-20865

Trans. of Italian industrial patent 333444, cl. XXIV, by Brick Trust, Ltd., London, petitioned 28 Sep 34, issued 30 Dec 35 (priority of filing no. 2823 presented in Switzerland 30 Sep 33).

DESCRIPTORS: *Plastics, Production, Liquids, Chemical analysis, Hardening, Phenols, Formaldehyde.

Processes are described for making synthetic balsams.

THE PRODUCTION OF THE COMMERCIAL FLUOROPLASTIC TYPES [1961] 11p.
Order from SLA $1.60 61-20994

Trans. of an unidentified article pub. by Hoecht Dyeworks, Inc., 28 Apr 60.

DESCRIPTORS: *Chlorides, *Ethylenes, *Fluorides, Production, *Plastics.

Golubeva, A. V., Gorodetskaya, R. A. and others.
SYNTHESIS OF HIGH-STRENGTH MATERIALS BASED ON INOCULATED STYRENE POLYMERS. [1961] [17]p. 25 refs. [DSIR LLU] M 2964...
Order from OTS or SLA $1.60 61-23368

Trans. of Plasticheskiye Massy (USSR) 1959, no. 1, p. 21-25.

DESCRIPTORS: Synthesis, *Styrenes, Polymers, Mechanical properties, Molecular weight.

Goodrich, B. F. and Nicolay, A. A.
IMPROVEMENT RELATING TO ARTICLES AND FILMS OF VINYL RESINS. [1961] 5p.
Order from OTS or SLA $1.10 61-20712

Trans. of French patent 1,063,292 [1954].

DESCRIPTORS: *Resins, *Plastics, Polymers, *Vinyl chlorides, Copolymerization, *Acrylic resins, Chemical analysis, Production, Thin films, Sheets.

The invention has as its principal object an article manufactured from a plastic or vinyl resin which contains no appreciable amount of plasticizer additive and which, for this reason, never stiffens or hardens on exposure to heat, light, and liquids such as water or solvents. Another object is a film, or a thin vinyl plastic sheet which is without support, but is pliable, flexible and resistant (or tough). The other objects of the invention appear in the short description which follows. This plastic material may be obtained by copolymerization of vinyl chloride and an alkyl acrylate in an aqueous medium containing an emulsifying agent. In general the mixture contains from 40 to 80% vinyl chloride and 20 to 60% acrylate (preferably 50 to 70% vinyl chloride and 30 to 50% acrylate) giving a plastic material whose hardness goes from 60 to 110 "A" Durometer, and elongation from 100 to 400% or more.

Stastny, Fritz.
STYROPOR: NEW POROUS SYNTHETIC (Styropor; ein Neuartiger, Poroser Kunststoff). [1961] 39p. (39 figs. omitted) 4 refs.
Order from SLA $3.60 61-20946

Trans. of Kunststoff (West Germany) 1954, v. 44, no. 4, p. 173-180 and no. 5, p. 221-226.

DESCRIPTORS: *Styrenes, *Polymers, Porosity, *Expanded plastics, Porous materials.

Tatevos'yan, G. O.
EXHIBITION OF THE ACHIEVEMENTS OF THE NATIONAL ECONOMY OF THE USSR. 7 Nov 61 [10]p. JPRS: 11037.
Order from OTS or SLA $1.10 62-13433

Trans. of Plasticheskie Massy (USSR) 1961, no. 5, p. 72-75.

Portions of this report will not reproduce well.

DESCRIPTORS: *Plastics, *Ethylenes, *Fluorides, Silicone resins, Manufacturing methods.

Rubber and Elastomers

IMPROVEMENTS RELATING TO VULCANIZATION METHODS OF CAOUTCHOUC, BALATA, GUTTA PERCHA, SYNTHETIC CAOUTCHOUC OR ANALOGUE SUBSTANCES AND THEIR BASIC MATERIALS. [1961] 9p.
Order from OTS or SLA $1.10 62-10296

Trans. of Franch patent 861 306, by Rubber Stichting Co., Netherlands, appl. 2 Nov 39, granted 22 Oct 40, pub. 6 Feb 41 (3 patent applications submitted in the Netherlands 9 Nov 38. 18 Mar and 5 Aug 39).

DESCRIPTORS: Vulcanizates, *Vulcanization, *Rubber, *Synthetic rubber, Resins.

Crespi, Giovanni and Flisi, Umberto.
SOME THERMODYNAMIC PROPERTIES OF VULCANIZED CIS-1,4-POLYBUTADIENE. [1961] 2600 words, 7 refs.
Order from CTS(Chem) $10.40 CTS(Chem)-249
subsequent copies $1.75/ea.

Trans. of [Ia] Chimica e [I]'Industria (Italy) 1961, v. 43, no. 9, p. 993-998.

DESCRIPTORS: *Butadienes, Dienes, *Polymers, *Vulcanizates, Elastomers, Thermodynamics, Stresses, Crystal structure.

Wood and Paper

Many, G.
DIFFICULTIES IN TISSUE MANUFACTURE. [1961] 3p.
Order from SLA $1.10 61-20009

Trans. of Papiripar (Hungary) 1960, v. 4, no. 4, p. 171-172.

DESCRIPTORS: *Paper, Manufacturing methods, Quality control, Paper industry

Muller-Rid, W., Stark, A., and Pausch, G.
THE QUALITY OF THE FORMATION AS A CONSEQUENCE OF CONSTRUCTIVE AND OPERATIVE FACTORS. [1961] 22p. (22 figs. omitted) 14 refs.
Order from SLA $2.60 61-20485

Trans. of das Papier (West Germany) 1960, v. 14, no. 12, p. 697-709.

DESCRIPTORS: *Paper, Paper industry, Production, Industrial equipment.

Hydrodynamic measurements, which have been carried out in the laboratory at models and at normally sized stuff distributors and stock inlets, show that only a firm knowledge about the hydrodynamical behaviour of the construction elements enables the constructor to project and to dimension stuff distributor and inlet correctly. A comparison of profile curves of papers, which have been produced at various operating states shows the influence of the operating conditions on the quality and equality of the formation. Only a combination of optimum conditions from both, the constructive and the operative side, leads to the best possible quality of the formation. Some directions for the critical examination of the function of stuff inlets are given.

Nikitin, V. M. and Akim, G. L.
BLEACHING AND PURIFYING OF TECHNICAL CELLULOSE BY OXYGEN AND ALKALI. [1961] 6p.
Order from OTS or SLA $1.10 61-20866

Trans. of Bumazhnaya Promyshlennost' (USSR) 1960, v. 35, no. 12, p. 5-7.

DESCRIPTORS: Bleaching, Purification, *Cellulose, Oxygen, Reagents, Cellulose, Chemistry, Alkaline earths, Oxides.

Oyama, Sigeo, Matuo, Ryukiti, and Nakaba, Yukio.
ON THE MIXED-BEATING OF VINYLON FIBRE AND PULP. Pt. 1 of Studies on the Manufacture of Synthetic-fibre Paper. [1961] 7p. (3 figs. omitted) 8 refs.
Order from SLA $1.10 61-20010

Trans. of [Parupu Kami Kogyo Zasshi] (Japan) 1960, v. 14, p. 166-169.

DESCRIPTORS: *Paper, *Synthetic fibers, Processing, *Wood pulp fibers, *Paper industry, Ball mills, *Vinyl radicals, *Acetates, Mechanical properties, *Rayon fibers.

Prior to the mixed-beating of bleached kraft pulp and Vinylon, Vinylon fibre was beaten in a mortar and a ball-mill, and the possibility of fibrilation of vinyl fibre was ascertained. An observation of the behaviour in the beater of mixed samples of bleached kraft pulp and Vinylon showed that the use of short cut staple is better for the circulation of pulp in the beater, and an even mixing. Of cut Vinylon, tow is superior to crispated Vinylon staple regarding better circulation, and even dispersion in the bleached kraft pulp in the beater. During a mixed-beating of bleached kraft pulp and Vinylon, it was found that frothing in the beater increases with an increase in the rate of the mixing of Vinylon. Small lumps form in the beater and these were found to consist mainly of Vinylon. The formation of lumps in the beater was effectively avoided by using short-cut Vinylon tow. The breaking length declines rectilinearly with an increase in the rate of mixing Vinylon, whereas the specific tearing strength increases with the amount of Vinylon up to a point, upon passing which it declines.

Willems, P.
THE TREATMENT OF PULPS BY KINEMATIC HIGH FREQUENCY AND ULTRASONICS. [1961] 22p. (21 figs. omitted) 37 refs.
Order from SLA $2.60 61-20185

Trans. of A[ssociation] T[echnique de l'I]I[ndustrie] P[apetiere]. Bull[etin] (France) 1960, no. 2, p. 66-83.

DESCRIPTORS: High frequency, *Ultrasonics, *Wood pulp fibers, *Paper industry, Electric currents.

Wultsch, F[erdinand] and Schmut, R[udolf].
CRITICAL INVESTIGATIONS ON FIBRE TESTING INSTRUMENTS. Sep 61, 8p. (16 figs. omitted) 11 refs.
Order from SLA $1.10 61-20738

Trans. of Wochenbl[att für] Papierfabrik[ation] (West Germany) 1961, v. 89, no. 11/12. p. 523-531.

DESCRIPTORS: *Wood pulp fibers, Physical properties, Processing, *Paper, Production, Test equipment

This paper discusses beating investigations, relationships between beating and the physical properties of fibre fractions from the Clark fibre fractionator, together with the physical properties of hand made sheets. The hand made sheets were made from the whole pulp and from the fibre fractions obtained from the Clark fibre fractionating device at different beating points. Screen fractionation of pulps gives fibre fractions which, after the commencement of beating, exhibit only slight changes in their physical properties. These physical properties of the hand made sheets made from the fractions still remain the same in spite of progressive beating and progressive development of the properties of the whole pulp. Comparisons between fibre fractions obtained from different beating devices show that the

fractions compared exhibit similar properties, although the whole pulps differ considerably. After the commencement of beating and after the removal of small sections of broken fibre and fibre slime, chemical pulps achieve uniform and characteristic properties Hence there is a possibility of adding mucilages as binder either before or after the commencement of beating in order to reduce the period of beating and amount of energy required, thus obtaining an effect which is regarded as "chemical beating". (Author)

MATHEMATICS

Biryukov, B. V.
GOTTLOB FREGE'S THEORY OF MEANING. 14 Nov 61 [4]p. JPRS: 11041.
Order from OTS or SLA $1.10 62-13543

Trans. of mono. Primenenie Logiki v Nauke i Tekhnike (The Application of Logic in Science and Technology) Moscow, 1960, p. 502-503.

DESCRIPTORS: *Mathematical logic, Vocabulary, Language, Theory.

Frege's predecessors in the treatment of the concept of meaning were the Stoics, who were the first to draw a distinction between the designatory word, the object or objects to which this word applies and the content or meaning of a word, the thought expressed in it. Frege made the concept of name so precise that, while retaining its closeness to the ordinary use of the word "name" in common speech, it became one of the basic concepts of mathematical logic. Frege rejected the traditional classification of names into the unique and the general, but introduced a distinction between names of objects and names of functions. This was associated with his concept of object, according to which an object is whatever a function is not. He considered concepts as special cases of functions; in his view a concept is a function which sets either truth or falsehood in correspondence with each argument. Therefore expressions denoting concepts (properties) and relationships are, according to him, particular cases of names of functions. Names which denote objects he calls proper names, names denoting functions functional names, and names denoting concepts (properties) conceptual names.

Rothe, R., Ollendorff, F., and Pohlhausen, K.
THEORY OF FUNCTIONS AS APPLIED TO ENGINEERING PROBLEMS, tr. by Alfred Herzenberg Revised Engish ed. 1961, 189p.
Order from Dover Publications, Inc., 180 Varick St., New York, 14, N. Y. $1.35

Trans. of mono. Funktionentheorie und ihre Anwendung in der Technik, Berlin, n.d.

DESCRIPTORS: Applied mathematics Engineering, Handbooks, *Functions, Theory, Complex variables, Integrals, Potential theory, Integration, Taylor's series, Series, Electric fields, Magnetic fields, Construction, Transients, Electrical engineering.

Computing Devices

Glotov, V. G.
EFFECT OF POROSITY ON THE PROPERTIES OF FERRITE CORES. 20 Sep 61 [15]p. 5 refs.
MCL-1234/1+2. AD-264 627.
Order from OTS or SLA $1.60 61-28818

Unedited rough draft trans. of Vestnik Elektropromyshlennosti (USSR) 1961 [v. 32] no. 1, p. 34-38.

DESCRIPTORS: *Ferrite cores, Porosity, Hysteresis, Binders, *Memory devices, *Computers, Circular coils.

Maximum rectangularity of hysteresis loops of ferrite cores is obtained with optimal porosity assigned by the binding substance. Differences in the porosity of pressings affects dimensions but has no bearing on the rectangularity of hysteresis loops of cores. (Author)

Tadenuma, R. and Kita, J.
AUTOMATIC TRANSLATION BY THE "YAMATO" COMPUTER. Foreign Developments in Information Processing and Machine Translation. 22 Sep 60 [12]p. JPRS: 3948.
Order from OTS or SLA $1.60 60-31780

Trans. of unidentified article reprinted from Symposium on Automation, Oct 59. Proceedings.

DESCRIPTORS: *Machine translation, Language, Coding, Dictionaries, *Digital computers, Computers, Programming.

Automatic translation from English to Japanese using the Yamato model computer designed at the Electrical Testing Laboratory was summarized in this report. The number of different commands was 46, the total programming being for about 2000 words. Although relatives and participial construction were not considered, we believe that these problems can be adequately handled since the Yamato computer can be programmed to store 4096 words. We have entertained the thought that papers could be written in a language adaptable to translation by the Yamato computer. For instance, if the past tense is made to always end with "ed" and the past participle with "en," it would greatly simplify automatic translation even though the language differed from that in common use. (Author)

MECHANICS

Golitsynskaya, E. D.
CERTAIN PROBLEMS OF STABILITY OF THIN CYLINDRICAL SHELLS (Nekotorye Voprosy Ustoichivosti Tonkikh Tsilindricheskikh Obolochek). [1961] [23]p. (foreign text included) 5 refs.
Available on loan from SLA 62-14005

[Rough draft] trans. of [Akademiya Nauk SSSR. Institut Mekhaniki]. Inzhenernyi Sbornik, 1959, v. 25, p. 145-153.

DESCRIPTORS: *Structural shells, *Cylindrical bodies, Stability, Load distribution, Deflection, Theory, Numerical methods and procedures, Partial differential equations.

The investigation is based on the equations of the linear theory of thin small-curvature shells. Consideration is given to the stability equation, complex loading of a cylindrical panel, the solution of fundamental nonlinear equations of the theory of cylindrical shells, satisfying all the boundary conditions, and the stability of a closed cylindrical shell. (See also 60-21429, 61-10820)

Grushko, G. S.
THE BENDING OF A THIN ISOTROPIC PLATE WEAKENED BY A SEMICIRCULAR CUT-OUT (Zgin Tonkoy Izotropnoy Pliti, Oslablenoy Otvorom u Formi Pivkola). Mar 60 [7]p. 4 refs. TIL/T. 4879; [DSIR LLU] M1872.
Order from OTS or SLA $1.10 61-13195

Trans. of [Mashinostroyeniye Za Rubezhom] (USSR) 1955, no. 1, p. 177-181.

DESCRIPTORS: *Metal plates, Elasticity, Stresses, Deformation, Mathematical analysis.

By applying the method of M. I. Muskhelishvili, and putting the function $Z = \omega(\zeta) =$

$R_i \frac{\sqrt{3}}{9}\left(2 - \frac{4}{\zeta} + \frac{5}{4}\zeta + \frac{5}{8}\zeta^2 + \frac{13}{64}\zeta^3\right)$ as conformally representing the periphery of the semicircle on the unit circle, we investigate the bending of a thin isotropic plate weakened by a cut-out in the form of a semicircle. (Author)

Kostovetskii, D. D.
ON THE BENDING OF THE CURVE OF A THIN-WALLED TUBE, THE CROSS SECTION OF WHICH HAS A FORM CLOSE TO CIRCULAR, IN THE PRESENCE OF EXTERNAL OR INTERNAL PRESSURE. 15 May 61 [10]p. 2 refs. MCL-928/1 + 2.
Order from OTS or SLA $1.10 61-27136

Rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1959, no. 6, p. 127-131.

DESCRIPTORS: *Pipes, Deformation, *Pressure, Mathematical analysis, *Stresses

The shifts and stresses are determined in the curve of a thin-walled tube the cross section of which has a form slightly deviating from the circular in the case of the simultaneous action of bending moments and internal or external pressure. The deviation of the cross section from the circular form was found to have a considerable effect on the stress and deformation state of the tube. The solution can be used for computations of strength and rigidity in steam and gas pipes. (Author)

Novozhilov, V. V.
THEORY OF ELASTICITY, tr. by J. J. Shorr-Kon. 1961, 323p. 63 refs. PL-480 Comm.
Order from OTS $3.25 61-11401

Trans. of mono. Teoriya Uprugosti, Leningrad, 1958 [366p.].

DESCRIPTORS: *Elasticity, Theory, Deformation, Plasticity, Nonlinear systems, Linear systems, Complex variables, Stresses, Mathematical analysis, Thermodynamics, Solid state physics.

Contents:
Theory of strain
Equilibrium of a volume element
Strain energy and related principles; stress potential of an ideally elastic body; stress-strain relations
Curvilinear coordinates
General formulas of the clasical (linear) theory of elasticity
The problem of Saint-Venant
The plane problem of the theory of elasticity.

Polubarinova-Kochina, P. Ya.
THE PLANE OF NON-STEADY FLOW OF GROUND WATER (Ploskie Neustanovivhiesya Dvizheniya Grutovikh Vod). [1961] [34]p. 14 refs.
Order from OTS or SLA $3.60 61-20419

Trans. of Russian language mono. Teoriya Dvizheniya Gruntovikh Vod, n.p., n.d., chap. 25, p. 618-639.

DESCRIPTORS: *Hydrology, Water, Fluid flow, Oils, Hydrodynamics, Numerical analysis, Partial differential equations.

Consideration is given to water conditions on a free surface, the problem of spreading of perturberances of ground water in a half-plane, the problem of spreading of perturberance of ground water in a layer of finite depth, the influx of ground water to drain in layers at infinite depth, and the problem of shrinkage of contour of oil content.

Aerodynamics and Pneumatics

Sedov, L. I.
NEW DEVELOPMENTS IN AERODYNAMICS (Novoe v Aerodinamike). [1961] [4]p. [DSIR NLL] M. 4653.
Order from OTS or SLA $1.10 62-15713

Unedited trans. from Pravda [Moscow] (USSR) 1961, no. 36, p. 3.
Another trans. is available from OTS or SLA $1.10 as 61-27845, MCL-1043, 18 July 61 [6]p.

DESCRIPTORS: *Aerodynamics, Supersonics, Supersonic flight, Gas flow, Shock waves, Explosions.

Sidorov, O. P.
ON THE CALCULATION OF THE FLOW AROUND A CONE (K Raschetu Obtekaniya Konisa). [1961] [9]p. (foreign text included) 1 ref.
Available on loan from SLA 62-14014

[Rough draft] trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1959, no. 2, p. 144-146.

DESCRIPTORS: *Conical bodies, Hypersonics, *Hypersonic flow, Velocity, Numerical analysis, Differential equations.

The steady-state axially symmetric flow around an infinite cone is considered. The speed of flow is assumed to be hypersonic. The approximate equation for the velocity potential is used to obtain a solution in closed form.

METALLURGY

PHYSICS OF METALS AND METAL WORKING, 1961, VOL. 11, NO. 2: SELECTED ARTICLES. 28 Sep 61 [54]p. (2 tables 31 equations 19 figs. omitted) 48 refs. FTD-TT-61-3; AD-265 799.
Order from OTS or SLA $5.60 62-13180

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1961, v. 11, no. 2, p. 186-202, 252-260, 272-280.

DESCRIPTORS: Behavior, *Solids, Solutions, Electrical properties, Resistance, Thermoelectricity, *Iron alloys, Alpha particles, Beta particles, Transition temperature, Steel, Metals, Alloys, Deformations, Heating, Cooling, Reduction, Exchange reactions, *Internal friction, *Martensite, Crystals, Growth, Elasticity, Phase studies, Stresses, Photoelectric materials, Diffusion, Metallurgy, Forge presses.

Contents:
On the theory of behavior of concentration heterogeneities in regular solid solutions, by G. L. Krasko and B. Ya. Lyubov
Changes in electric resistance and thermoelectromotive force in the process of alpha⇄gamma conversion of alloyed iron, by M. E. Blanter and A. K. Mashkov
On the question pertaining to the effect of internal friction connected with the direct and reverse martensite conversions, by E. I. Estrin and others
Growth of elastic crystals of martensite gamma'-phase under the influence of external stresses, by I. A. Arbuzova and others.

REFERATIVNYI ZHURNAL. METALLURGIYA (USSR) 1961, NO. 3, ABSTRACTS 3B105-3I453: SELECTED TRANSLATIONS OF ABSTRACTS OF ARTICLES BY CHINESE AUTHORS PERTAINING TO COMMUNIST CHINA (Soviet Abstracts, Metallurgy). 25 Jan 61 [43]p. JPRS: 12168.
Order from OTS or SLA $4.60 62-15647

Complete translations of the Russian-language abstracts of articles originally published in the Sino-Soviet bloc.

DESCRIPTORS: *Metallurgy, Abstracting, Automation, Production, *Cast iron, Open hearth furnaces, *Steel, *Castings, Ores, *Rare earth elements, *Alloys, Rolling mills, Pressure, Pipes, *Metals, Heat treatment, Chemical engineering, Welding, Phase studies, Corrosion.

Baimakov, A. Yu.
HIGH PURITY TELLURIUM PRODUCED BY ZONE MELTING. [1961] 9p. 4 refs.
Order from OTS or SLA $1.10 61-16431

Trans. of #Tsvetnye Metally (USSR) 1960 [v. 33, no. 6] p. 43-45.

DESCRIPTORS: *Zone melting, Production, *Tellurium, Chemical analysis, Impurities, Castings, Purification.

A study showed that it is possible to produce high purity tellurium at a large scale by zone melting. A device was developed which makes it possible to produce up to 40 kg pure tellurium per month with an expenditure of electrical energy of 50 kilowatt-hour/kg. The yield can be considerably increased by increasing the dimensions of the vessel.

Balandin, G. F. and Silin, L. L.
ON THE ROLE OF FRICTION WHEN WELDING WITH ULTRASOUND (O Roli Treniya pri Svarke Ul'trazvukom). 26 June 61 [9]p. (4 figs. omitted) 3 refs. MCL-1045/1. AD-261 806
Order from OTS or SLA $1.10 61-27440

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1960, no. 6, p. 42-46.

DESCRIPTORS: *Friction, *Ultrasonic equipment, Temperature, *Welding, Ultrasonics, Welded joints, Mechanical properties.

Data are presented on the temperature field distribution in ultrasonic welding.

Bokshtein, S. Z., Kishkin, S. T., and Moroz, L. M.
INVESTIGATION OF THE STRUCTURE OF METALS BY RADIOACTIVE ISOTOPE METHODS. Oct 61 205p. 261 refs.
Order from OTS $3.00 AEC-tr-4505

Trans. of mono. Issledovanie Stroeniya Metallov Metodom Radioaktivnykh Izotopov, Moscow, 1959. Another trans. of p. 95-193 is available from OTS or SLA $11.00 as 61-23866, MCL-736, 24 Feb 61 [143]p.

DESCRIPTORS: Metals, *Alloys, Separation, Surfaces, Distribution, Diffusion, *Tracer studies, Isotopes, *Radioactive isotopes, Gamma rays, Beta particles, Microstructure, Autoradiography, Grains (Metallurgy).

Contents:
Inhomogeneity of metals and alloys separation surfaces in metals
Investigation of the distribution and diffusion of elements in metals by means of tracer atoms
Experimental investigation of chemical inhomogeneity of alloys
Investigation of diffusion in metals by the autoradiography method (local character of diffusion of elements)
Laws of distribution and diffusion of components in real alloys.

Drumm, Manuel F. and Cook, Robert Ruffin.
IMPROVEMENTS RELATIVE TO FOUNDRY COMPOSITIONS. [1961] 8p.
Order from OTS or SLA $1.10 61-20868

Trans. of French patent 1.071.233, Cr. 14, Cl. 8, by Monsanto Chemical Co., USA, appl. 19 Nov 52, granted 3 Mar 54, pub. 27 May 54 (appl. registered in the USA 3 Dec 51).

DESCRIPTORS: Industrial production, *Castings, *Molding, Thermosetting resins, *Foundries, Metals, *Binders.

An appropriate composition is given for the preparation of casting molds for the casting of molten metals.

Gel'man, A. S., Kryanin, I. R. and others.
INVESTIGATION OF STEEL GRADES AND THE MANUFACTURE OF WELDED STEEL SHAFTS OF LARGE WATER TURBINES (Issledovanie Stali i Tekhnologii Izgotovleniya Svarnykh Valov Moshchnykh Gidroturbin). [1960] 12p. PL-480 Int.
Order from OTS $0.50 60-51134

Trans. of Energomashinostroenie (USSR) 1959 [v. 5] no. 12, p. 33-37.

DESCRIPTORS: Hydroelectric power systems, *Turbines, *Shafts, *Steel, Production, Manganese alloys, Silicon alloys, *Welding, Forging, Metal plates, Castings, Deformation, *Electric welding, Slags, Mechanical properties.

Golovin, S. Ya.
DIE-CASTING BY "SQUEEZING" (Lit'e Vyzhimaniem). 7 Nov 60 [14]p. MCL-668/1; AD-256 147.
Order from OTS or SLA $1.60 61-27430

Unedited rough draft trans. of mono Osobye Vidy Lit'ya; Kratkie Spravochnye Materialy, n.p., 1959, p. 305-313.

DESCRIPTORS: *Casting, Processing, *Dies, Metals, Melting, Fluid flow, Pressure, Industrial production, Design, Alloys, Manufacturing methods.

The squeeze casting process is described. This process consists of pouring the molten metal into the diffuser of the casting mold and moving the moveable die of the mold to the side of the fixed die at a constant angular velocity. As the dies draw together, the metal is squeezed upward from the receptacle filling the cavity of the mold between the dies. This method is characterized by the filling of the casting mode by (1) a flow of large cross section, which substantially decreases the hydrodynamic losses while the mold cavity is being filled and (2) the shaping of the cast under conditions of continuous flow of molten metal in the filling of the mold. The continuous flow of molten metal around the solid skins forming on the moldwalls results in a high-quality cast. (ASTIA abstract)

Graue, G. and Zöhler, A.
THE RAPID DETERMINATION OF CALCIUM AND MAGNESIUM CONTENTS IN ORES AND SLAGS. [1961] [7]p. 9 refs.
Order from SLA $1.10 61-16270

Trans. of unidentified mono. (communication) from the Technical Materials Testing Establishment of Hüttenwerk Phoenix A.G., Duisberg-Ruhrort, n.d.

DESCRIPTORS: *Calcium, *Magnesium, Determination, *Ores, *Slags, Iron industry, Steel industry, Blast furnaces.

Gureva, L. N.
THE NATURE OF THE β -PHASE IN THE NICKEL-ALUMINUM SYSTEM. [1961] 8p. (1 fig. 1 table 2 refs. omitted) 2 refs.
Order from OTS or SLA $1.10 61-20293

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 77, no. 3, p. 415-418.

DESCRIPTORS: Phase studies, *Nickel alloys, *Aluminum alloys, Chemical analysis, Atomic structure, Lattices, X-rays, Photometers, Thermoelectricity, Temperature, Alloys.

Jacquet, P. A.
RAPID METHOD OF PREPARATION OF SURFACES FOR METALLOGRAPHICAL EXAMINATION BY LOCAL ELECTROLYTIC POLISHING. [1961] [32]p. 12 refs.
Order from SLA $3.60 61-18373

Trans. from [Office National d'Etudes et de Recherches Aeronautiques]. Note Technique (France) 1957, no. 40.

DESCRIPTORS: *Electrolytic polishing, Surfaces, Preparation, Metals, Alloys, Non-destructive testing.

Localised electrolytic polishing, or tampon polishing, has been employed for preparing surfaces for examination by the new transparent cellulose replica technique, on specimens of all shapes and sizes. Methods of operation which make it possible to restrict the polished zone or to enlarge it fairly extensively are given for numerous examples of metals in current use, among them those used in aircraft construction, (light and very light alloys, refractory alloys) and in nuclear reactors (uranium, zirconium). (Author)

Koch, W.
INVESTIGATIONS INTO VIBRATION IN THE VICINITY OF FORGES. Rept. no. 17 of the Committee on Forgings of the Verein Deutscher Eisenhüttenleute. [1961] [16]p. 3 refs.
Order from SLA $1.60 61-20593

Trans. of Stahl und Eisen (West Germany) 1958, v. 78, no. 19, p. 1320-1326.

DESCRIPTORS: Forging, *Vibration, Measurement, Intensity, Noise, Hammers, *Forge presses.

Characteristic results for the vibrations set up by various types of hammer are discussed and conclusions drawn with respect to limiting distances. (Author)

Korneev, N. I. and Skugarev, I. G.
HIGH ALLOY STEELS AND HEAT RESISTANT ALLOYS. 4 Apr 61 [103]p. (39 figs. 18 tables omitted). MCL-1004; AD-264 522.
Order from OTS or SLA $9.10 62-13303

Unedited rough draft trans. of mono. Osnovy Fiziko-Khimicheskoi Teorii Obrabotki Metallov Davleniem, Moscow, 1960, chap. 2, p. 80-149.

DESCRIPTORS: *Heat resistant alloys, *Steel, Plasticity, Deformation, Hardness, Iron alloys, *Chromium alloys, *Nickel alloys, Additives, Aluminum, Cobalt, Manganese, Titanium, Vanadium, Hardening, Crystal structure, Grains (Metallurgy), Intermetallic compounds, Processing, Heat treatment, Heating, Forging, Phase transitions, Transition temperature, Microstructure, Crystallization, Impurities, Dispersion hardening, *Alloys.

Contents:
Plasticity diagrams of highly alloyed steels
Variations in the plasticity and deformation-resistance in relation to the status of tension
Deformation resistance of the high-alloy metals
Changes in macrostructure and in mechanical characteristics in relation to general deformation
Diagrams of work-recrystallization, establishing of the work temperatures and of the critical deformations
Structure of high-alloy materials and its effects upon plasticity
Thermo-mechanical conditions of pressure working of high alloy metals

Lipkin, S. V.
DIRECT METHOD OF OBTAINING METALLIC ZINC, LEAD AND COPPER FROM SLAGS, FORMED IN NON-FERROUS METALLURGICAL PROCESSES, BY MEANS OF ELECTROLYSIS (Pryamoe Poluchenie Metallicheskogo Tsinka, Svintsa i Medi iz Shlakov Tsvetnoi Metallurgii s Pomoshch'yu Elektroliza). Dec 61 [12]p. 7 refs. RTS 1892.
Order from OTS or SLA $1.60 62-13729

Trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata] Vestnik, 1959 [v. 15] no. 1, p. 38-45.
Another trans. is available from RIS $20.00 as RIS C-139 [1961] 13p.

DESCRIPTORS: *Metals, Separation, *Slags, Electrolysis, *Zinc, *Lead, *Copper.

The possibility was demonstrated of cathodic deposition of zinc from silicate melts with a high iron activity factor. The critical (corresponding to the initial separation of zinc) cathode current density is 7 or 8 A/cm^2. The yield of zinc per unit current (without taking into account the current consumed in the deposition of lead and copper) was generally over 100%. The potential in the bath is determined by the size of the gap between the electrodes, required for the circulation of the electrolyte. For a distance, for example, of 10 mm and t = 1300°C, this comes to 6 V The apparent extraction of zinc (from the analysis of the slag before and after the experiments) reached 98%. About 90% of the extracted zinc can be condensed in the form of compact metal. The lead is almost entirely removed. The process is intense and can be carried out with equipment of limited size. For instance, for processing 400 tons of slag per diem, containing 10% Zn, 13 or 14 m^2 of cathode surface are required. (Author)

Mikhailov-Mikheev, P. B.
THE EFFECT OF SEPARATE ALLOYING ELEMENTS ON THE HEAT RESISTANCE OF METALS (Vliyanie Otdel'nykh Legiruyushchikh Elementov na Zharoprochnost'). 2 Nov 60 [70]p. 54 refs. MCL-481/1; AD-257 674.
Order from OTS or SLA $6.60 61-27433

Unedited rough draft trans. of mono. Metall Gazovykh Turbin, n.p., 1958, chap. 5, p. 135-176.

DESCRIPTORS: *Heat resistant alloys, Austenite, *Steel, Phase studies.

A review is presented of Russian and other literature on the effects of carbon, nickel, chromium, cobalt, tungsten, molybdenum, vanadium, titanium, niobium, aluminum, silicon, manganese, nitrogen, boron, and rare earth contents on the properties of austenitic heat resistant steels.

Nekhendzi, Y. A. Girshovich, N. G. and others.
CASTING PROPERTIES OF HEAT-RESISTING ALLOYS. Sep 60 [11]p. (6 figs. omitted) 2 refs. [DSIR LLU] M3144.
Order from OTS or SLA $1.60 61-27524

Trans. of Issled[ovaniya] po Zharoproch[nym] Splavam (USSR) 1959, v. 5, p. 210-219.

DESCRIPTORS: *Heat resistant alloys, *Casting, Fluidized solids, Fluids, *Liquid metals, Production, Castings, *Iron alloys, *Nickel alloys.

The present paper gives the results of studies of the critical temperatures, fluidity in the liquid state and solidification of heat-resisting alloys. (Author)

Osipov, K. A.
ASPECTS OF THE THEORY OF HEAT RESISTANCE OF METALS AND ALLOYS, tr. by P. Münch. 1961, 249p. 474 refs. PL-480 Comm.
Order from OTS $2.50 60-51083

Trans. of mono. Voprosy Teorii Zharoprochnosti Metallov i Splavov, Moscow, 1960 [284p.].

DESCRIPTORS: *Heat resistant alloys, *Metals, *Solid state physics, High temperature research, Deformation, Failure (Mechanics), Thermal stresses,

Oxidation, Resistance, Phase studies, Mechanical properties, Plasticity, Chemical analysis, Structures, Crystals, Crystal structure, Lattices, Melting, Diffusion, Grains (Metallurgy), Recovery, *Theory.

Contents:
The "composition and heat-resistance" diagrams of metallic systems
The interatomic bond in crystalline solids and the problem of heat resistance
Distortions of the crystal lattice of metallic phases, and heat resistance
Plastic deformation, failure and melting of metals
Laws of the changes in the mechanical properties of metals and alloys
Diffusion and heat resistance
Slip along the grain boundaries in metals at high temperatures
Recovery, polygonization and recrystallization
Alloying of metals in the region of their solid solutions
Multiphase alloys
Metallic alloy systems formed on the basis of chemical compounds.

Sapozhnikov, L. M.
FORMED BLAST FURNACE FUEL FROM NON-COKING COALS. 7 Oct 59, 8p.
Order from OTS or SLA $1.10 61-20923

Trans. of Koks i Khimiya (USSR) 1959, no. 3, p. 22-27.

DESCRIPTORS: *Blast furnaces, *Fuels, Coal gases, *Coal, Gases, *Coke.

Savitskii, E. M.
THE INFLUENCE OF TEMPERATURE ON THE MECHANICAL PROPERTIES OF METALS AND ALLOYS, tr. by D. Sherby. 1961, 303p. 503 refs.
Order from Stanford University Press, Stanford, Calif. $9.00

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: Temperature, Mechanical properties, *Metals, *Alloys, Bibliography, Metallurgy, Deformation, Stresses, Thermodynamics, Test equipment, Test methods, Crystal structure, Heating, Cooling.

Serebrennikova, E. Ya.,
THE ROASTING OF GRANULATED COPPER CONCENTRATES AND FURNACE CHARGES IN A FLUIDIZED BED IN A SEMI-INDUSTRIAL PLANT (Obzhig Granulirovannykh Mednykh Kontsentratov i Shikht v Kipyashchem Sloe ua Polupromyshlennoi Ustanovke). Dec 61 [11]p. 2 refs. RTS 1863.
Order from OTS or SLA $1.60 62-13914

Trans. of Tsvetnye Metally (USSR) 1959 [v. 32] no. 12, p. 23-28.
Another trans. is available from OTS $0.75 in 60-11693, JPRS-2739, 25 May 60 [30]p.

DESCRIPTORS: *Copper, Processing, Industrial plants, Ores, Pellets, *Fluidized solids.

Takahashi, Shuichiro, Kubota, Tadashi and others.
MICRO-STRUCTURES OF SINTERED URANIUM DIOXIDE PELLETS. Sep 61, 5p. 7 refs.
Order from OTS $0.50 AEC-tr-4246

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 2] p. 73-77.

DESCRIPTORS: Microstructure, Pellets, *Uranium compounds, *Dioxides, Sintering, Temperature, Grains (Metallurgy), Crystals, Growth, Powder metallurgy, Reactor fuels.

When the pressed powder was heated in a hydrogen atmosphere at 1,200°C, growth of crystal grains was found in various parts, and the existence of the cluster step (a cluster of growth steps is called cluster step in a "macro" sense of the word) showed that sintering has already begun. Cluster steps were found in various parts in the forms of hexagons, octagons or tetragons. By analogy from the pores, which will be referred to later, the facets surrounded by steps are considered to be {111} and {100}. When temperature becomes 1,600°C, sintering makes considerable progress, and higher cluster steps than before are seen. The pores are open in the early stage of the sintering process. At the later stage, they become closed due to surface diffusion or migration and probably to some evaporation and condensation. In pellets sintered at temperature as high as 1,750°C, the surface does not have any open pores, and the step has concentric circles. Although the closed pores at the initial stage are all in the crystal grain boundary and have irregular forms, they have stabilized forms which depend upon the crystallographical orientations of neighboring crystals. With the progress of sintering, crystal grains grow, and pores come to be left within a crystal grain. The pores within crystal grains are spherical at first, and ring-form steps, which have specific directions in respect of the parent crystals, are seen in the spherical pores.

Ferrous Metals

Aniola, J.
STUDY OF ECONOMY AND EFFECTIVENESS OF OXYGEN REFINING IN OPEN-HEARTH AND ELECTRIC FURNACES. Dec 61, 3600 words.
Order from HB $9.85 HB-5252

Trans. of Hutnik (Poland) 1961, v. 28, no. 5 p. 196-202.

DESCRIPTORS: *Open hearth furnaces, *Electric furnaces, Economics, *Steel industry, Refineries, *Oxygen.

Bannykh, O. A. and Zudin, I. F.
CERTAIN REGULARITIES IN THE FORMATION OF THE σ-PHASE IN STEEL WITH 18% Cr AND 14% Mn. 28 Aug 61 [12]p. (8 figs. omitted) 11 refs.
MCL-1021/1. AD-264 613
Order from OTS or SLA $1.60 61-28810

Unedited rough draft trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1960, v. 6, p. 187-194

DESCRIPTORS: *Steel, Chemical analysis, Chromium, Manganese, Ferrites, Carbides, Grains (Metallurgy), Hardness, Crystal structure, Lattices, Mechanical properties.

In a steel with 18% Cr and 14% Mn after quenching in water from 1100°, the decomposition of the ferrite upon tempering begins with precipitation of carbides arranged in chains along the grain boundaries. The process of precipitation of the σ-phase is accompanied by a considerable rise in hardness. The precipitation of the carbides in tempering results in a reduction of strength and ductility, while decomposition of the ferrite with formation of the σ-phase sharply increases the strength and diminishes the ductility of the steel. (Author)

Gertsriken, S. D., Dekhtyar, I. Ya., and Kumok, L. M.
INVESTIGATION OF THE HEAT CORROSION RESISTANCE AND STRUCTURE OF A NUMBER OF IRON-BASE ALLOYS, RELATIVE TO THEIR COMPOSITIONS. 28 Aug 61 [13]p. (2 figs. 9 tables omitted) 2 refs. MCL-1026/1. AD-264 612
Order from OTS or SLA $1.60 61-28806

Unedited rough draft trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1960, v. 6, p. 259-267.

DESCRIPTORS: *Iron alloys, Heat, *Corrosion resistant alloys, Temperature, Gas turbines.

The present paper is devoted to a search for new heat-resistant alloys based on iron and suited to long-term service at elevated temperatures as gas-turbine parts. (Author)

Gorb, M. L.
PLASTIC-DEFORMATION RESISTANCE OF HIGH-STRENGTH STEELS UNDER CONDITIONS OF AMBIENT COMPRESSION IN TEMPERATURE RANGE FROM 20 TO 400°. 26 Oct 60 [48]p. (22 figs. omitted) 14 refs. MCL-157/1; AD-256 092.
Order from OTS or SLA $4.60 61-27421

Unedited rough draft trans. of mono. Issledovaniya v Oblasti Metallovedeniya i Kontaktnoi Prochnosti Metallov, n.p., 1958, p. 92-119.

DESCRIPTORS: *Steel, Deformation, Plastic flow, *Plasticity, Stresses, Surfaces, Hardening, Fracture (Mechanics), Mechanical properties, Friction, Machines, Test methods, Tests, Design.

Modern machines, as well as their individual assemblies and parts, perform under conditions of high speeds, temperatures, and pressures. In consideration of these conditions it is necessary to insure the total structural strength and, in particular, the contact strength as well as the wear-resistance of contacting machine parts. The method of testing high-strength steels by the nonuniform volume compression (B. D. Grozin's method) is simple, inexpensive, and sufficiently reliable for appraising their resistivity to plastic deformations which can arise under the actual stress-temperature conditions. Preliminary testing by the nonuniform volume compression method is recommended in assigning the steel of a new brand (by comparison with known brands), and selecting the rational mode of its thermal processing in the production of such machine parts as pendulum bearings, various kinds of gear wheels, and camshaft lobes. The testing temperature should approximate the temperature at which the part will operate. (Author)

Gotlib, A. D. [Goncharov, P. G.] and others.
EXPERIENCE IN THE CONTROL OF THE THERMAL STATE OF A BLAST FURNACE FROM THE TOP-GAS COMPOSITION [Opyt Regulirovaniya Teplovogo Sostoyaniya Domennoi Pechi po Sostavu Koloshnikovogo Gaza]. [1961] 2500 words.
Order from HB $6.90 HB-5204

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 4, p. 31-37.

DESCRIPTORS: *Blast furnaces, *Control, Temperature, Gases, Analysis, *Steel industry.

Lessing, Heinz and Malissa, Hanns.
INVESTIGATION OF OXIDE INCLUSIONS WHICH CAN BE DEFORMED BY HOT ROLLING AND OCCUR IN RIMMING STEELS. Rept. no. 266 of the Chemists Committee of the Verein Deutscher Eisenhuttenleute. [1961] [9]p. 9 refs.
Order from SLA $1.10 61-20596

Trans. of Archiv für das Eisenhuttenwesen (West Germany) 1958, v. 29, no. 10, p. 627-629 (Max-Planck Institut fur Eisenforschung (West Germany). Communication-785.

DESCRIPTORS: *Oxides, Deformation, *Steel.

The acicular oxide inclusions occurring in rolled rimming steel can be isolated by the method of P. Klinger and W. Koch. The microchemical and X-ray crystallographic investigations showed that the needles have a Tephroite-like structure. As in the case of the globular and partially deformed oxide isolate already separated earlier by J. Kuschmann and G. von der Dunk, so also the isolated needles lie in the Tephroite-Spessarite field in the $MnO/Al_2O_3/SiO2$ ternary system and everything points to the fact that they have arisen from slag globules. The melting point of these needles lies between 900 and 1000°C, so that a deformation on rolling is entirely possible. (Author)

Mankher, Lajos.
INTERIOR AND SURFACE DEFECTS OF STEEL WIRE. [1961] [31]p. 5 refs.
Order from SLA $3.60 61-18664

Trans. of Kohaszati Lapok (Hungary) 1953 [v. 8] no. 11, p. 225-239.

DESCRIPTORS: *Steel wire, Production, Castings, Rods, Heat treatment, Deformation, Wire.

To modernize the technology of drawn wire production it is necessary, beside controlling the quality of the wire, to control carefully the smelting, pouring, and

the quality of ingots (billets) (preparation of test pieces their careful choosing and metallographic checking). It is also important to check the removal of surface defects from rods; heating previous to rolling; careful positioning of rolls (samples taken from rods, constant checking of the surface during rolling). The quality of the manufactured steel wire is influenced, provided the rod was faultless, mostly by the heat treatment. Beside the careful control of heat treatment (furnace, lead bath temperature, rate of pressing), metallographic examination during patenting is indispensible, disposing of rejects before further operations are carried out. Trial drawings from a sample of the heat-treated material may be of great help in adjusting the manufacturing technique to requirements. If the pickling apparatus is not up to date (constant acid content, constant temperature and iron salt content) it is necessary to test for these components and determine their concentrations regularly. (Author)

Light Metals

Beresnev, V. I., Bulychev, D. K., and Rodionov, K. P
CHARACTERISTICS OF EXTRUDING METAL BY HIGH-PRESSURE LIQUID AT ELEVATED TEMPERATURES (Osobnnosti Protsessa Vydavlivaniya Metallov Zhidkosti Vysokogo Davleniya pri Povyshennykh Temperaturakh). 17 Aug 61 [15]p. 16 refs.
MCL-1276/1+2.
Order from OTS or SLA $1.60 61-28817

Unedited rough draft trans. of #Fizika Metallov i Metallovedenie (USSR) 1961, v. 11, no. 1, p. 115-122.

DESCRIPTORS: *Metals, *Extrusion, *Aluminum, High pressure research, High temperature research, *Hydraulic research, Liquids.

Investigations are described of the process of hydraulic extrusion of aluminum at pressures to 10,000 kg/cm^2 and temperatures to 400°C using transformer oil, kerosene, graphite or mixtures as hydraulic materials.

Herrmann, E.
ALUMINUM WIRE BY THE PROPERZI CONTINOUS CASTING AND ROLLING PROCESS. [1961] 20p. (refs. 18 figs, omitted).
Order from SLA $1.60 61-20494

Trans. of Aluminium (Germany) 1960 [v. 36] Oct, p. 568-579.

DESCRIPTORS: *Aluminum wire, Casting, Rolling mills, Manufacturing methods, Wire.

Structural Metallurgy and Corrosion

Dehlinger, Ulrich.
THEORETICAL METALLOGRAPHY. Monographs on Pure and Applied Metallurgy, no. 13. Oct 61, 299p. 231 refs.
Order from OTS $4.00 AEC-tr-4500

Trans. of mono. Theoretische Metallkunde, pub. by Springer Verlag, Berlin/Heidelberg/Göttingen, 1955.

DESCRIPTORS: *Crystal structure, Crystallization, Crystals, *Metallic crystals, Electron diffraction analysis, Lattices, Chemical elements, Structures, Heat of formation, *Microstructure, *Alloys, Physical properties, Thermodynamics, Vibration, *Grains (Metallurgy), Relaxation time, Metals.

Contents:
Fundamentals of crystallography
Electrons in the lattice
Structure of the elements in the periodic system
Heat of formation and lattice structure of alloys
Physical properties
Phase equilibrium and transformation kinetics.

Moroz, L. S. and Khesin, Yu. D.
STUDY OF THE MECHANISM OF THE HYDROGEN BRITTLENESS OF TITANIUM AND ITS ALLOYS (Issledovanie Mekhanizma Vodorodnoi Khrupkosgi Titana i ego Splavov). 26 Apr 61, 34p. (foreign tex included) 19 refs.
Order from OTS or SLA $3.26 UCRL Trans-661 (L)

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1960, no. 1, p. 111-122.

DESCRIPTORS: *Titanium, Titanium alloys, *Hydrogen embrittlement, Mechanical properties, Metallurgical analysis, Microstructure, Grains (Metallurgy), Stability.

Saltykov, S. A.
STEREOMETRIC METALLURGY, PT. I. 6 Oct 61 [314]p. MCL-905, pt. 1. AD-267 700.
Order from OTS or SLA $19.75 62-15203-1

Unedited rough draft trans. of mono. Stereometricheskaya Metallografiya, 2d rev. ed., Moscow, 1958, chaps. 1-3.

DESCRIPTORS: Microanalysis, *Microstructure, Alloys, *Molecular structure, Phase studies, Chemical analysis, *Grains (Metallurgy), Surfaces, Measurement, *Stereochemistry.

Contents:
Microscopic structure of alloys and methods of their characteristics
Quantitative phase and structural volumetric composition of an alloy
Measurement of boundary surfaces of grains, phases and structural components.

Seeger, A. and Schöck, G.
SPLITTING OF DISLOCATIONS IN METALS WITH CLOSE-PACKED LATTICES. [1961] 32p. 18 refs.
Order from SLA $3.60 61-20851

Trans. of Acta Metallurgica (U.S.) 1953, v. 1, Sep, p. 519-530.

DESCRIPTORS: *Metals, *Lattices, *Dislocations, Crystals, Elasticity, Reflection, Crystal structure.

The present paper deals with two problems in the theory of dislocations: (1) the elastic properties of straight dislocation lines in crystals of arbitrary symmetry; (2) the splitting of half-dislocations in closest-packed lattice planes. It turns out that the usual splitting into pure edge dislocations and pure screw dislocations is only possible if the direction of the dislocation line is an even symmetry axis. Another simplification with respect to the most general case occurs when the dislocation line is situated in a reflection plane (but not rotation-reflection plane). The splitting of the half dislocations is treated for both edge and screw dislocations by means of the variation method first used by Leibfried and Dietze, using the concept of a specific stacking fault energy and taking the anisotropy fully into account. Numerical results are given for Cu, Al, Co. Some of the results deviate considerably from those based on the stacking fault energy and isotropic elasticity. (Author)

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ACTA PHYSICA SINICA, 1960, VOL. 16, NO. 1: SELECTED TRANSLATIONS. 22 Sep 61 [117]p. 43 refs. JPRS: 10212.
Order from OTS or SLA $9.60 61-28521

Trans. of Wu Li Hsüeh Pao (Chinese People's Republic) 1960 [v. 16] no. 1, p. 2-56.

DESCRIPTORS: *Nuclear physics, Periodicals, USSR, Lead, Bismuth, Thallium, Nuclei, Atomic spectrum, Neutron spectroscopy, Radioactive isotopes.

Contents:
On the energy spectrum of nuclei near Pb^{208} (I) - Pb^{205} and Pb^{204}, by Yu Chaun-tsan and others
Energy spectrum of atomic nuclei near PB^{208} (II) - Bi^{208} and Bi^{207}, by Huang Wei-chih and others
On the energy spectrum of atomic nuclei near Pb^{208} (III) - Pb^{208} and Tl^{208}, by Jen Keng-wei and others
On the γ transition of atomic nuclei near Pb^{208} (I) transitions E2 and E3, by Liang Ch'un-t'ien and others
On the γ transition of atomic nuclei near Pb^{208} (II) - Mi transition, by Huang Wei-chih and others.

NUCLEONICS, 1958, VOL. 3, NO. 1: SELECTED ARTICLES, tr. by J. Bachrach. 1961, 74p. 54 refs. PL-480 AEC.
Order from OTS $0.50 AEC-tr-4144

Trans. of Nukleonika (Poland) 1958, v. 3, no. 1, p. 3-13, 15-25, 27-40, 43-82, 111-132.

DESCRIPTORS: *Nucleonics, Periodicals, *Nuclear power plants, *Uranium, Ores, *Heterogeneous reactors, Atoms, *Thermal neutrons, *Plutonium, Analysis, *Photographic emulsions, *Neutron counters, Boron, Florine, Gas flow, Radiation counters, Poland

Contents:
Nuclear power problems in Poland, by P. J. Nowacki
Problems of processing Polish uranium-bearing raw materials, by T. Adamski
Poland's first nuclear reactor, by J. Aleksandrowicz
On certain reaction mechanisms of hot atoms, by I. G. Campbell
The chemical properties of plutonium in aqueous solutions, by A. Pasternak
Apparatus for the semi-automatic registration and analysis of gap lengths in tracks in nuclear emulsions, by A. Starzynski
Communications
Proportional 2 flow counter type AET-60
G-M flow counter, type ABAT 30/0
Neutron counters with boron trifluorine, type NUM-12
Proportional cylindrical flow counter, type AEM-160
The chronicle.

NUCLEONICS, 1958, VOL. 3, NO. 2: SELECTED ARTICLES, tr. by Krystyna Kowalska. 1961, 54p. 51 refs. PL-480 AEC.
Order from OTS $0.50 AEC-tr-4145

Trans. of Nukleonika (Poland) 1958, v. 3, no. 2, p. 166-199 and 216-244.

DESCRIPTORS: *Nucleonics, Periodicals, *Uranium, Water, Physical properties, Neutron age, Diffusion theory, Thermal neutrons, Neutrons, *Heterogeneous reactors, Heavy water reactors, Graphite moderated reactors, Design, Poland, *Beta decay, Parity, Neutrinos, Theory, Electrons, Nuclei, Polarization, Radioactive isotopes, *Transuranic elements, Atomic energy engineering, Accidents, *Particle accelerators, Accelerators, Radiation counters, Monitors, Ionization chambers, Construction, Operation.

Contents:
"Two-and-a-half" group equations and their application to uranium-water systems, by J. Arkuszewski
Work on the design of the second Polish research reactors, by K. Kowalska
Non-conservation of parity in Beta decay, by B. Kuchowicz
Radioisotope problems at the XVIth International Congress of Pure and Applied Chemistry, by J. Hurwic
On the course and cause of the reactors damage at windscale, by J. Metera
A new type of accelerator, by B. Kuchowicz
Communications.

NUCLEONICS [1958] VOL. 3, NO. 3: SELECTED ARTICLES, tr. by Krystyna Kowalsku. 1961, 69p. 151 refs. PL-480 AEC.
Order from OTS $0.50 AEC-tr-4146

Trans. of Nukleonika (Poland) [1958] v. 3, no. 3, p. 255-297, 299-341, 357-359.

DESCRIPTORS: *Nucleonics, Periodicals, Radiation effects, *Semiconductors, Organic compounds, *Reactor coolants, *Pulse counters, *Radioprotective

drugs, Ionization, Radioactive isotopes, *Radiochemistry laboratories, Radiobiology, Isotopes, Graphite, *Reactor moderators, Proportional counters.

Contents:
Radiation effect in semiconductors, by H. Rzewuski
Pile graphite, by A. Grossman
Organic compounds as reactors moderators and coolants, by J. Pawlikiewicz
Measurement of the pulse rise time in BF_3 proportional counters, by W. Dabek and A. Kazimierski
The structure and mechanism of the chemical protective agents against ionizing radiation, by A. M. Dancewicz
The distribution of radioisotopes, by R. Broszkiewicz
Biological isotope centers in Czechoslovakia, by J. Doroszewski
Chronicle.

NUCLEONICS, 1958, VOL. 3, NO. 4: SELECTED ARTICLES, tr. by Eugene Lepa. 1961, 51p. 74 refs. PL-480 AEC.
Order from OTS $0.50 AEC-tr-4147

Trans. of Nukleonika (Poland) 1958, v. 3, no. 4, p. 369-427 and 471-474.

DESCRIPTORS: *Nucleonics, Periodicals, Polonium, *Machines, Deterioration, Radioactive isotopes, *Scalers, Trigger circuits, *Countermeasures, Radiological contamination, *Radiation counters, Voltage, Recording devices, Conferences.

Contents:
Polonium, by A. Dorabialska
Study of the wear of machine parts with the aid of radioactive isotopes, by M. Arkuszewski
Scalers based on the Eccles-Jordan type trigger circuit, by A. Sawicki
Radiological protection abroad and in Poland, by J. Pensko
G-M counter platograph, type R-Pts-1
The Scientific Conference in Dubna.

NUCLEONICS, 1958, VOL. 3, NO. 5: SELECTED ARTICLES, tr. by Leon Ter-Orgnajan. 1961 [86]p. 106 refs. PL-480 AEC.
Order from OTS $0.75 AEC-tr-4148

Trans. of Nukleonika (Poland) 1958, v. 3, no. 5, p. 487-573, 575-588, 599-605.

DESCRIPTORS: *Nucleonics, Periodicals, Research program administration, Electromagnetism, *Isotope separation, Labeled substances, Radiation counters, Carbon, *Isotopes, *Uranium, Mining engineering, Plutonium, *Reactor fuels, *Radioactive isotopes, Economics, Education, Medicine, *Biological stains, Ores, Geophysical prospecting.

Contents:
The perspectives of the Polish nuclear energy programme, by S. Andrzejewski and others
Electromagnetic isotope separators and their application in nuclear physics, by W. Zuk
The application of labelled compounds in quantitative staining reactions in biology, by D. Shugar and others
Determination of ^{14}C isotope in the gaseous phase in a Geiger-Müller counter filled with a mixture of CO_2 or CO and a heavy saturated hydrocarbon, by I. Zlotowski and M. Zielinski
Prospecting for uranium ores in Poland, by J. Burek
Some problems of plutonium fuel cycles, by M. Taube
The application of radioactive isotopes for research and economic purposes in the USSR, by P. G. Savitskii
A course in radioactive isotope application in medicine and biology, Moscow, 18 Jan-8 Mar 58.
Conference of Nuclear Spectroscopy (no. 8) in Leningrad
Neutron counters with boron trifluoride; Types NUM-12, NUM-30, NUM-72, NUM-12 W, NUM-30 W and NUM 72 W

NUCLEONICS, 1958, VOL. 3, NO. 6: SELECTED ARTICLES, tr. by Leon Ter-Organjan. 1961 [67]p. 70 refs. PL-480 AEC.
Order from OTS $0.50 AEC-tr-4149

Trans. of Nukleonika (Poland) 1958, v. 3, no. 6, p. 615-631, 633-[659] 661-678, 695-700, 703-708.

DESCRIPTORS: *Nucleonics, Periodicals, Temperature, Determination, *Heterogeneous reactors, *Scalers, Trigger circuits, *Uranium, Geochemistry, *Heavy water, Isotopes, *Exchange reactions, Aerosols, *Porous filters, Radioactive waste disposal, Conferences, *Nuclear energy, *Scintillation counters.

Contents:
Temperature calculations in heterogeneous thermal neutron reactors, by A. Zmyslowski
Scalers based on the Eccles-Jordan type trigger circuits, by A. Sawicki
Uranium geochemistry and the possibilities of its natural concentrations, by A. Polanski
On using fluidization in the isotopic exchange contact reaction $HD + H_2O_{vapour} \rightleftarrows H_2 + HDO_{vapour}$, by A. Selecki
Filters for aerosols of radioactive substances
Polish-Czechoslovak Conference on Nuclear Energy (no. 2)
Communications
Scintillation counter of LS-1/58
News from Poland.

NUCLEONICS, 1959, VOL. 4, NO. 1: SELECTED ARTICLES, tr. by Eugene Lepa. 1961, 88p. 123 refs. PL-480 AEC.
Order from OTS $0.75 AEC-tr-4150

Trans. of Nukleonika (Poland) 1959, v. 4, no. 1, p. 1-32, 35-45, 47-65, 87-100, 103-111.

DESCRIPTORS: *Nucleonics, Periodicals, Conferences, *Combustion, *Radioactive isotopes, Aliphatic compounds, Acids, *Isotope separation, Ionization, *Sterilizers, Food, Medical supplies, Scientific research, Brazil, *Phospates, Butyl radicals, Physical properties, Medicine.

Contents:
Impressions of the International Conference on Atomic Energy in Geneva (no. 2) by L. Infeld
Isotope effect in the van Slyke combustion of some carbon-14 aliphatic alcohols and acids, by I. Zlotowski and M. Zielinski
The separation of isotopes in ultra-centrifuges, by A. Selecki
The application of ionizing radiation to the sterilization of food and medical supplies, by R. Broszkiewicz
Survey of the principal radioisotopes in biology and medicine, by J. Wasyluk
Nuclear research in Brazil, by K. Kowalska
The extraction properties of tributylphosphate ester, by S. Minc and Z. Libus
Communiques
Chronicle.

[NUCLEONICS] 1959, VOL. 4, NO. 3: [SELECTED ARTICLES] tr. by Eugene Lepa. 1961, 87p. 109 refs. PL-480 AEC.
Order from OTS $0.75 AEC-tr-4152

Trans. of Nukleonika (Poland) 1959, v. 4, no. 3, p. 241-251, 253-283, 285-303, 305-327, 330-343.

DESCRIPTORS: *Nucleonics, Periodicals, Neutrons, Nuclei, Neutron scattering, Inelastic scattering, Scattering, Temperature, Reactor moderators, Reactor theory, Reactor kinetics, Subcritical assemblies, Multiplication factor, Uranium, Ores, Deposits, Chemical analysis, Beta particles, Gamma rays, Measurement, Counting methods, Geiger counters, Halogens, Effectiveness, Merchant vessels, Nuclear propulsion, Economics, Radiochemistry, Symposia.

Contents:
Scattering and thermalization of neutrons by bound nuclei, by J. A. Janik
The reactor period as a function of the multiplication factor in the subcritical state, by W. Baran
A method of assessing domestic uranium ores, by K. Pinkas
Absolute methods of measurement of activity of beta and gamma emitters, by T. Radoszewski
Halogen-quenched G-M counters, by J. Lesinski
Nuclear propulsion in merchant marine, by M. Pawlikiewicz
Symposium of Radiochemical Division of Nuclear Research Institute, by A. Pasternak and A. Siuda
Chronicle.

Borisov, A. V. and Gverdtsiteli, I. G.
MEASUREMENT OF THE PRESSURE DIFFERENCES OF $B^{10}F_3$ AND $B^{11}F_3$ VAPORS. 18 Sep 61 [6]p. 5 refs. MCL-1422/1+2. AD-264 629
Order from OTS or SLA $1.10 61-28791

Unedited rough draft trans. of #Zhurnal Fizicheskoi Khimii (USSR) 1961, v. 35, no. 6, p. 1212-1214.

DESCRIPTORS: *Boron compounds, *Fluorides, *Isotopes, Vapor pressure, Measurement.

The pressure of saturated vapors of isotope mixture of boron trifluoride and $B^{10}F_3$ concentrations of 81.6% and 18.6% was measured by the differential method in the temperature range of 160.0 to 170.4°K. In this range $B^{11}F_3$ is the more volatile compound. The isotope solutions of $B^{10}F_3$ and $B^{11}F_3$ in the liquid and gas were assumed to be ideal, the enrichment factors were calculated from the experimental data. The enrichment factor increases with a drop in temperature from $(8.40 \pm 0.13) \times 10^{-3}$ at 170.4°K to $(10.10 \pm 0.24) \times 10^{-3}$ at 160.0°K.

Gorbachev, V. M. and Kazarinova, M. I.
COUNTING OF FISSION FRAGMENTS AND HEAVY CHARGED PARTICLES BY MEANS OF THIN SCINTILLATION FILMS [Registratsiya Oskolkov Deleniya i Tyazhelykh Zaryazhennykh Chastits Tonkimi Stsintillirushchimi Plenkami] tr. by Lydia Venters. Oct 59, 13p. 8 refs.
Order from OTS or SLA $1.60 AEC-tr-3860

Trans. of P[ribory i] T[ekhnika] E[ksperimenta] (USSR) 1957, no. 4, p. 20-24.
A trans. in French is available from OTS or SLA $1.60 as 61-23750, CEA R-744, 27 Oct 59 [18]p.

DESCRIPTORS: Thermal neutrons, Particles, *Scintillation counters, Thin films, Photomultipliers, Neutron detectors, Photoelectrons, *Fission fragments.
It is shown, that by means of scintillation films the recording of the heavy and the light fragments can be done separately. The films hold for the registration of fission fragments on a large background of the α-particles. The relationship of maximum amplitudes of the fission fragments and α-particles $(V_{light})_{max}$: $(V_{heavy})_{max}$: $(V_\alpha)_{max}$ = 10:3:1. The efficiency of the registration of fragments and α-particles by scintillation films proved to be close to 100%. The scintillation films have the resolving power of about 3×10^{-9} sec. The probable application of detectors with scintillation films is discussed (Author)

Kogan, B. Ya. Nechaev, Yu. A., and Tranin, F. E.
POSSIBILITIÉS DE SIMULER LES SYSTÈMES DE PUISSANCE NUCLÉATRE [Simulation of Nuclear Power Systems] tr. by Mme. Tatischeff. 10 Oct 61 [17]p. CEA Trans. no. R 1420 (text in French).
Order from OTS or SLA $1.60 62-13830

Trans. in French of #Avtomat[ika] i Telemekh[anika] (USSR) 1959, v. 20, no. 3, p. 349-354.

DESCRIPTORS: Simulation, *Nuclear power plants, Nuclear energy, *Power reactors, *Atomic energy engineering.

Mezhiborskaya, Kh. B.
PHOTONEUTRON METHOD OF DETERMINING BERYLLIUM. Dec 61, approx. 16,000 words.
Order from CB $12.50

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Beryllium, Determination, Photonuclear reactions, Safety, Shielding, Radiation hazards, Radioactivity, Nuclear physics, Neutrons.

Noyama, Shigeyoshiro.
ATOMIC RESEARCH IN COMMUNIST CHINA (Chogoku No Genshiryoku Kenkyu). 16 Nov 60, 11p. JPRS: 7021.
Order from OTS or SLA $1.60 60-41754

Trans. of Nihon to Chugoku [sic] (Japan) 1960, 21 Feb, p. 3.

DESCRIPTORS: *Atomic energy, *Research program administration, Nuclear power plants, Cosmic ray laboratories.

In 1956 the Chinese sciences proposed to catch up with the world standard in twelve years or by 1967. In Communist China there is the largest atomic reactor in Asia. It was built with assistance from the Soviet Union and completed in June 1958. In the fields of cosmic rays and high energy physics, there is a measurement center on Lo-hsueh Mountain (3,185 meters high) about a half day's automobile ride from Kunming, Yunnan Province.

Starik, I. E.
LES RADIOÉLEMENTS EN SOLUTIONS AUX CONCENTRATIONS EXTRÊMEMENT FAIBLES (Ob Ul'tramalykh Kontsentratsiyakh Radiozlementov v Rastvirakh [Radioelements in Solution at Ultramicro Concentrations] tr. by Fedorovsky. 6 June 61 [29]p. 84 refs. CEA Trans. no. R 1377 (text in French).
Order from OTS or SLA $2.60 61-28679

Trans. in French of Khim[icheskaya] Nauk[a i] Promyshl[ennost'] (USSR) 1959 [v. 4] no. 4, p. 446-456.

DESCRIPTORS: *Colloids, Radiochemistry, *Radioactive isotopes, Phase studies, Solutions.

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Boguszewska, M., Kraska, T. and others.
STUDIES OF SOME HEAT-LOSS PHENOMENA IN SOLDIERS UNDERGOING PHYSICAL EXERTION. 1 Aug 60, 27p. 35 refs. JPRS: 5189.
Order from OTS or SLA $2.60 60-41088

Trans. of Postepy Higieny i Medycyny Doswiadczalnej (Poland) 1959, v. 13, no. 6, p. 787-803.

DESCRIPTORS: *Heat transfer, Military personnel, *Physical fitness, *Clothing, Climatic factors, *Exposure, Body temperature.

During ergographic studies, the load and duration of effort were constant, but the climatic parameters were changed: temperature, air movement and clothing. Test were conducted on how and to what extent climatic conditions and clothing influence the performance of a selected muscle group and the general effort capacity of the tested person. In all cases a rise in the efficiency of muscle work was established when the temperature of the environment dropped to a certain level. The air movement, increasing heat losses, contributed to this effect. Subjects wearing denim uniforms displayed a higher rise in physical fitness than those dressed in cloth uniforms. An analysis of the importance of clothing in ensuring a favorable microclimate of persons executing an effort, under changing thermal conditions of the environment, confirms the superior heat-protecting characteristics of cloth uniforms over denim uniforms.

PHYSICS

REFERATIVNYI ZHURNAL. FIZIKA (USSR) 1960, NOS. 7-12, ABSTRACTS 16034-33618: SELECTED TRANSLATIONS OF ABSTRACTS OF ARTICLES BY CHINESE AUTHORS PERTAINING TO COMMUNIST CHINA (Soviet Abstracts, Physics). 13 Oct 61 [98]p. JPRS: 10456.
Order from OTS or SLA $5.60 61-28761

Complete translations of the Russian-language abstracts of articles originally published in the Sino-Soviet bloc.

DESCRIPTORS: *Physics, Abstracting, Periodicals, Translations, China.

Klee, H. and Witte, H.
THE MAGNETIC SUSCEPTIBILITIES OF TERNARY MAGNESIUM ALLOYS AND THEIR INTERPRETATION ACCORDING TO THE ELECTRON THEORY OF METALS. [1961] 20p. 37 refs.
Order from SLA $1.60 61-20273

Trans. of Z[eitschrift für] Physik[alische] Chem[ie Leipzig] (East Germany) 1953/54, v. 202, no. 5/6, p. 352-378.
Another trans. is available from ATS $24.95 as ATS-93N52G [1961] 20p.

DESCRIPTORS: *Magnetic susceptibility, *Magnesium alloys, Brillouin zones, Metals, Electrons, Theory.

The magnetic susceptibilities of the Laves phases in the systems $MgCu_2$-$MgZn_2$, $MgCu_2$-$MgAl_2$, $MgCu_2$-$MgSi_2$ and $MgZn_2$-$MgAl_2$ were measured. The susceptibility of the electron gas is discussed from the viewpoint of the electron theory of metals by making use of Brillouin's zone model. In the case of the $MgCu_2$ phase in the system $MgCu_2$-$MgZn_2$ it is possible to carry out a semiquantitative calculation and to estimate the Fourier coefficients of the potential. It turns out that there is a paramagnetic effect similar to the anomalous diamagnetism, which is hence called anomalous paramagnetism. Only a qualitative discussion is carried out for the other phases of the systems investigated. In a few cases it can be shown that the phase boundary occurs when the Brillouin zone is largely filled with electrons. (Author)

Kornienko, L. S. and Prokhorov, A. M.
ELECTRON PARAMAGNETIC RESONANCE OF THE Fe^{3+} ION IN CORUNDUM. 29 Aug 61, 2p. AID rept. 61-126. AD-263 671.
Order from OTS or SLA $1.10 61-28480

Abstract trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1961, v. 40, no. 6, p. 1594-1601.

DESCRIPTORS: *Corundum, *Sapphires, Electrons, *Paramagnetic resonance, Resonance, Magnetic resonance, Nuclear spins, Microwave spectroscopy, Masers.

Electron paramagnetic resonance (EPR) spectra of Fe^{3+} in corundum were measured for the cases of normal and parallel orientation of the trigonal axis of the crystal with respect to the magnetic field within the range from 9 to 10 kmc. Fe^{3+} ion concentration was 0.02 and 0.002%. Five EPR lines were observed. The widths of the first, fourth, and fifth lines in the order of increasing field, measured at half-power points, reached 10 oersteds and were independent of the temperature. The second and third lines were observed only outside a range of critical frequencies whose value depends upon temperature and is determined by the spin-Hamiltonian coefficients. The width of the second and third lines strongly depends upon the operating frequency. Spin-Hamiltonian coefficients g, D, a , and a-F, were obtained at 290°, 77°, and 4.2°K. While the g-factor was fairly constant, the other three coefficients were dependent upon temperature, all tending to increase at a similar rate with decreasing temperature. The spin-lattice relaxation time measured by the pulse saturation method at 4.2°K, 3.2 cm wavelength, was 12 ± 1 milliseconds for the 0.002% concentration, and 8 ± 1 milliseconds for the 0.02% concentration of Fe^{3+} (Extracted)

Luchin, S. M.
ANALYSIS OF COMPLEX GAS MIXTURES WITH M. L. VEINGEROV'S OPTIC-ACOUSTICAL GAS ANALYZER. [1961] [3]p. 6 refs.
Order from OTS or SLA $1.10 61-20134

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, v. 49, p. 418-420.

DESCRIPTORS: *Gases, Mixtures, *Optical analysis, *Acoustics, Analysis, Sound.

Wegener, H.
MOTT SCATTERING ON GOLD FOIL OF FINITE THICKNESS (Mott-Streuung an Streufolien Endlicher Dicke). [1961] [23]p. 16 refs.
Order from SLA $2.60 61-20423

Trans. of Zeitschrift fur Physik (West Germany) 1958, v. 151, p. 252-263.

DESCRIPTORS: *Gold, *Foils, Metal films, Thickness, Electron transitions, *Scattering, *Electrons, Velocity, Polarization.

Electronics

Troitskii, V. S.
CERTAIN PROBLEMS OF THE THEORY OF FLUCTUATIONS IN OSCILLATORS: THE INFLUENCE OF FLICKER NOISE (Nekotoryye Voprosy Teorii Flyuktautsii v Avtoreneratotakh: Vliyanie Flikker-Shuma) tr. by Robert Judson. June 61 [25]p. 21 refs.
Order from OTS or SLA $2.60 61-28688

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1958 [v. 1] no. 1, p. 20-33.

DESCRIPTORS: *Oscillators, Radiofrequency generators, Frequency, Measurement, Phase shifters, *Noise (Radio), Electronic equipment.

Previous developments of fluctation theory satisfactorily explained only the wings of the spectral distribution of the output power of radio frequency generators. In the present article the theory is developed further to permit solution of the problem of flicker noise as it influences amplitude and frequency. It is shown that flicker noise always causes amplitude fluctuations; frequency fluctuations result if the frequency of operation fails to coincide with the resonant frequency of the circuit. The indicated influence of flicker noise furnishes a partial explanation of the technical width and shape of the spectral line. The results qualitatively explain experimentally observed spectra of frequency and amplitude fluctuations. (Author)

Wolf, Werner.
AN INVESTIGATION OF VELOCITY VARIATIONS IN A MAGNETIC TAPE RECORDER, WITH THE AID OF ELECTRO-MECHANICAL ANALOGIES. [1961] 27p. 19 refs.
Order from SLA $2.60 61-18766

Trans. of Hochfrequenztechnik und Elektroakustik (East Germany) 1960, v. 69 [no. 4] p. 41-52.

DESCRIPTORS: *Magnetic tape, *Magnetic recording systems, Flutter, Velocity, Synchros, Electromechanical converters, *Electromagnetic drives.

An examination was made of the effect of flutter in a magnetic tape recorder resulting from the compliance of the tape and the inertias of the rotating parts. This was done through the use of the electrical analog of the mechanical system. Certain of the mechanical parameters were evaluated by using the electrical analog as an "analog computer"; this is done by adjusting the frequency response of the electrical analog circuit to correspond to that of the mechanical system; then the electrical parameters are measured, and the unknown mechanical parameters can be calculated. In order properly to design this electrical analog circuit, we derived equations for converting the mechanical values into the corresponding electrical values, and vice versa. (Author)

Ardenne, M. von and others.
ELECTRON-ADDITION MASS SPECTOGRAMS OF CONDENSED AROMATIC HYDROCARBONS. [1961] 15p. (18 footnotes 15 figs. omitted).
Order from SLA $1.60 61-20034

Trans. of Ang[ewandte] Chemie (West Germany) 1961, v. 73, no. 4, p. 136-142.

DESCRIPTORS: *Hydrocarbons, Additives, Oxygen, Molecular weight, Molecular structure, Organic compounds, *Mass spectroscopy, Electrons, *Naphthalenes, *Anthracenes, *Naphthacenes, *Phenanthrenes, Fluorenes.

The electron-addition mass spectrography makes possible the reproducing of spectra, small in the number of lines, of evaporable organic substances. The electron-addition molecular mass spectrograms of condensed aromatic hydrocarbons are discussed. A critical splitting off of molecules is largely avoided; the most intensive line is at any given time exactly located with the ideal mass, which corresponds to the molecular weight, or is located one unit of mass below, owing to the splitting off of an H-atom. Due to the addition of oxygen, lines appear with higher masses. Spectra of the addition of electrons are appropriate for the determination of the molecular weight of polyatomic organic molecules. They also make possible determination of the structure of molecules and the number of the C-and H-atoms in the molecule. (Author)

Greinacher, E., Lüttke, W., and Mecke, R.
STUDIES IN INFRARED SPECTROSCOPY OF WATER DISSOLVED IN ORGANIC SOLVENTS (Infrarotspektroskopische Untersuchungen an Wasser, Gelöst in Organischen Lösungmitteln). [1961] 19p. (4 figs. omitted) 54 refs.
Order from SLA $1.60 62-10034

Trans. of Z[eitschrift] für Elektrochemie (West Germany) 1955, v. 59, no. 1, p. 23-31.

DESCRIPTORS: *Water, *Organic solvents, *Infrared spectroscopy.

The infrared spectra of water in 10 solvents are recorded in the fundamental and harmonic frequency ranges, and different frequency and intensity changes are noted in the spectrum of water as well as in those of certain solvents. On the basis of these measurements, it is possible to rank the solvents in order of their proton-acceptor character. The resulting series is discussed in terms of a relationship set up by Kirkwood, Bauer and Magat between relative frequency shift and a function of the dielectric constant of the solvent. (Author)

AUTOMATIC CRYSTALLIZER "KRISTALLOMAT": NEW COMPLETELY CONTINUOUS CRYSTALLIZER FOR ALL SALT SOLUTIONS. [1961] 2p.
Order from OTS or SLA $1.10 61-20873

Trans. of type BASF-DBP 1 059 883 and foreign patents of the Badische Anilin- und Sodafabrik A.G., pub. [1959].

DESCRIPTORS: *Crystals, *Salts, *Solutions, Production, *Crystallization.

Belov, N. V. and Vainshtein, B. K.
TENDENCIES IN THE DEVELOPMENT OF MODERN CRYSTALLOGRAPHY (SUMMARY OF THE INTERNATIONAL CONGRESS OF CRYSTALLOGRAPHERS NO. 5) Chemistry: USSR no. 15, 2 Oct 61 [9]p. JPRS: 10388.
Order from OTS or SLA $1.10 61-28595

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 4, p. 99-104.

DESCRIPTORS: Chemistry, Mineralogy, *Crystals, Crystal structure, Lattices, Crystallization.

Brazdziumas, P. P., Sirvaitis, A. I., and Aleksejunas, B. K.
PHOTOCONDUCTIVITY OF CADMIUM SELENIDE AND TELLURIDE POLYCRYSTALS. [1961] 17p. 20 refs.
Order from OTS or SLA $1.60 61-20068

Trans. of [Akademiya Nauk Litovskoi SSR, Vilna. Trudy]. Seriya B, 1958, no. 4(16) p. 17-29.

DESCRIPTORS: *Photoconductivity, *Cadmium compounds, *Selenides, Sensitivity, X-rays, Determination, *Tellurides, *Crystals, Photoelectric effect, Photoelectric materials.

Optimum conditions of the sensitivity within the visible and X-ray spectral regions of photoresistors made from CdSe and CdTe were determined. When the temperature for heating in air atmosphere is increased the specific conductivity of photoresistors is increased, and the time response of photoconductivity of photoresistors made from CdSe is decreased within the visible spectral region, and increased within the X-ray region. The time response of the photoelectric current of photoresistors made from CdSe and CdTe is decreased both within the visible and X-ray spectral regions when the illuminance and the modulation frequency are increased. The sensitivity of photoresistors made from CdSe polycrystals can be higher than that of photoresistors made from CdS when the time response of the photoelectric current is smaller. The preparation of photoresistors from CdSe is simple. Therefore, these photoresistors can be used freely in dosimetry, photometry, automation, etc. (Author)

Dykman, I. M.
POLARIZING EXCITONS IN THE KCl TYPE CRYSTALS (Polyarizuyushchie Eksitony v Kristallakh Tipa KCl) tr. by A. Pingell. 10 Oct 61, 16p. 12 refs.
N R L Trans. no. 868.
Order from OTS $0.50 62-11075

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1954, v. 26, no. 3, p. 307-316.

DESCRIPTORS: *Alkali metals, *Halides, *Chlorides, *Potassium compounds, *Crystals, Polarization, Lattices, Ions, Temperature, Excitation, Electrons, Electron transitions, Light, Absorption, Microstructure, Numerical analysis.

An electrical multipole is proposed as a model for a polarizing exciton in alkali-halide crystals. It consists of a positive charge +e, located in the halide node of a lattice, and of six equal negative charges of -1/6 e each, located at the nearest metallic nodes. Determination is made of the displacement and polarization of the lattice ions, caused by the exciton field, with the microscopic structure of the crystal taken into account. A KCl crystal is examined for exciton light absorption; a calculation is made of the half-width of the corresponding absorption band and also of its temperature dependence. (Author)

Kmito, E. I. and Kmito, A. A.
DETERMINATION OF THE ELECTRICAL CONDUCTIVITY OF OXIDE FILMS ON ALUMINUM IN A HUMID ATMOSPHERE. [1961] [7]p. 1 ref.
Order from OTS or SLA $1.10 61-20699

Trans. of #Zavodskaya Laboratoriya (USSR) 1958, v. 24, [no. 3] p. 303-306.

DESCRIPTORS: *Electrical conductance, Determination, *Films, *Oxides, *Aluminum compounds, *Atmosphere, Electrical properties, Chemical properties, Test methods, *Humidity.

A wide range of measured values is encountered in the study of the electrical conductivity of oxide films on aluminum in a humid atmosphere. In order to maintain reliable accuracy, three methods of study are given: the first method is the most simple and may be recommended for a rapid preliminary estimation of sample properties; the second method gives satisfactory results at low humidities; the third method gives satisfactory results at high humidities. (Author)

Rodionov, K. P.
EFFECT OF HIGH PRESSURE ON SOME PHYSICAL PROPERTIES OF SOLIDS. 1960, 17p. 20 refs.
Order from OTS or SLA $1.60 AEC-tr-4377

Trans. of Akademiya Nauk SSSR. Institut Fiziki Metallov [Sverdlovsk]. Trudy, 1958 [v. 20] p. 273-282.
A trans in French is available from OTS or SLA $2.60 as 62-13808, 3 Oct 61, 21p. CEA-tr-R1406.

DESCRIPTORS: *High pressure research, Physical properties, *Solids, Hydrostatic pressure, Lattices, Quantum mechanics, Specific heat, Conductivity, Phase transitions, Crystals, Microstructure, *Solid state physics, Pressure.

Previous experimental and theoretical studies (Soviet and non-Soviet) are reviewed.

Rodionov, K. P.
INFLUENCE DES HAUTES PRESSIONS SUR CERTAINES PROPRIETES PHYSIQUES DES CORPS [Effect of High Pressure on Certain Physical Properties of Solid Bodies] tr. by Szyszman. 3 Oct 61 [21]p.
CEA Trans. no. R 1406 (text in French).
Order from OTS or SLA $2.60 62-13808

Trans. in French of [Akademiya Nauk] SSSR. Inst[itut] Fiz[iki] Metallov [Sverdlovsk]. Trudy, 1958, no. 20, p. 273-282.

DESCRIPTORS: *High pressure research, Physical properties, *Solids, *Hydrostatic pressure, Lattices, Quantum mechanics, Specific heat, Conductivity, Phase transitions, Crystals, Microstructure, *Solid state physics, Pressure.

Savin, G. M., Leonov, M. Ya., and Podstrigach, Ya. S.
ABOUT THE POSSIBILITY OF CREATING TEMPERATURE STRESSES IN THE DEFORMED BODY BY THE MECHANICAL METHOD (Pro Mozhlivist Utvorennya Temperaturnikh Napruzhen v Deformovanomu Tili Mekhanichnim Sposobom). Aug 61 [8]p. 3 refs. RTS 1894.
Order from OTS or SLA $1.10 61-27784

Trans. of Prykladna Mekhanika (USSR) 1960, v. 6, no. 4, p. 445-448.

DESCRIPTORS: Electrostatics, Pressure Surfaces, *Temperature, *Stresses, Thermal stresses, Mathematical analysis, *Elastic shells, *Elasticity, Theory, Load distribution, Heating, Deformation, Volumetric analysis, Cylindrical bodies, Heat transfer.
The basic impossibility of a full accomplishment of the temperature stresses by means of an external force loading in the elastic body is shown. The temperature stresses may be created by other means, which follows from the examination of the reasons forming a basis for the appearance of stresses during the heating. The method of supplementary deformations is equally applicable in the case of an elastic as well as plastic deformation in the case of simple loading.

Theoretical Physics

Gorbunov, E. P., Dolgov-Savel'ev, G. G. and others.
INVESTIGATION OF A TOROIDAL DISCHARGE IN A STRONG MAGNETIC FIELD. Apr 61, 25p. 3 refs.
Order from OTS $0.50 AEC-tr-4109

Trans. of unidentified mono. (paper) furnished by Soviet scientists on the occasion of their visit to Project Matterhorn, May 60.

DESCRIPTORS: *Magnetic fields, Electric discharges, Electrical conductance, Heating, Stability, Degasification, *Plasma physics, Plasma oscillations.

Experiments with heating and stability of the plasma ring with the current in a strong longitudinal magnetic field are described. The experiments were carried out on the toroidal apparatus "Tokomak-2," the discharge chamber of which was heated to temperatures of 400-450°C. It is shown that improvement of vacuum conditions and degasification of the walls lead to a change in the character of the process; in particular, there appears a second maximum of current, and oscillations of the discharge current with a frequency of 10 kilocycles and higher were observed. The temperature of the electrons, determined with respect to the electrical conductivity of the plasma, came to about 30 electron volts at the close of the process. (Author)

Nochevinka, I. I.
CERTAIN PROBLEMS IN MAGNETOHYDRODYNAMICS CONSIDERING THE FINITE CONDUCTIVITY OF THE MEDIUM (Nekotorye Zadachi Magnitnoi Gidrodinamiki s Uchetom Konechnoi Provodimosti Sredy). 10 July 61 [14]p. 4 refs.
JPRS: 9579.
Order from OTS or SLA $1.60 61-27202

Trans. of Moscow U. Vestnik. Seriya 3: Fizika, Astronomiya (USSR) 1961 [v. 16] no. 1 [p. 49-55].

DESCRIPTORS: *Magnetohydrodynamics, Numerical analysis, Fluids, Compressible flow, Conductivity, Magnetic fields, Viscosity.

An approximating method of finding the parameters of planar motion of a conducting gas is offered, taking into account "magnetic" viscosity in the presence of a magnetic field, perpendicular to the plane of flow. An approximating technique is advanced for the solution of the equations which describe the planar, isentropic flow of an ultrarelativistic gas in an arbitrary magnetic field. Results show that a perpendicular magnetic field does not violate the isentropicity of an ultrarelativistic gas. In the case of a magnetic field arbitrarily disposed in the plane of flow, isentropic behaviour is generally violated.

Sitenko, A. G. and Stepanov, K. N.
SUR LES VIBRATIONS DU PLASMA ELECTRONIQUE DANS UN CHAMP MAGNETIQUE [O Kolebaniyakh Elektronnoi Plazmy v Magnitnom Pole] (Vibrations of Electron Plasma in a Magnetic Field) tr. by P. Liquine [1961] [23]p. 12 refs. CEA Trans. no. R 805 (text in French).
Order from OTS or SLA $2.60 61-15750

Trans. in French of Zh[urnal] Eksper[imental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) [1956] v. 31, no. 10, p. 642-651.

DESCRIPTORS: *Vibration, *Plasma physics, *Magnetic fields.

Zabotinskii, M. E. and Radunskaya, I. L.
THE TIME SCALE ON WHICH WE LIVE (Vremya po Kotoromu My Zhivem) tr. by Mary Kay Hefley. Aug 61 [19]p.
Order from OTS or SLA $1.60 61-28690

Trans. of Priroda (USSR) 1961 [v. 50] no. 4, p. 9-16.

DESCRIPTORS: Stars, Atoms, Molecules, *Time, Motion, Sun, Relativity theory, Velocity, Rotation, Drag, Mathematical prediction.

We are confronted with the evidence of competition between the stars and the invisible atoms and molecules for the right to claim to be the guardians of time. (Author)

Thermodynamics

Alimov, R. Z.
CERTAIN LAWS OF THE HEAT EXCHANGE AND MASS EXCHANGE PROCESSES IN EVAPORATIVE COOLING OF STRONGLY HEATED SURFACES (O Nekotorykh Zakonomernostyakh Protsessa Teplo-i Massoobmena pri Isparitel'nom Okhlazhdenii Sil'no Nagrevaemykh Poverkhnostei). [1961] [36]p. (foreign text included) 18 refs.
Available on loan from SLA 62-14008

[Rough draft] trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1960, no. 1, p. 94-103.
Another trans. is available from OTS $0.75 as 61-11961, JPRS-7483, 9 Feb 61, 23p.

DESCRIPTORS: *Sweat cooling, Cooling, Gases, Gas flow, *Heat transfer, *Mass transfer, Convection, Liquids, Films, Surfaces, Boundary layer, Diffusion, Heat tolerance.
The heat exchange and mass exchange that accompany evaporative cooling is investigated with the aid of ordinary criterial equations by introducing in them additional criteria, which take into account the interrelation of these processes when they act simultaneously. (Author)

Avgul, N. N., Berezin, G. I. and others.
HEAT OF ADSORPTION OF HEXANE VAPOURS ON CARBON BLACKS: THERMODYNAMICS AND ADSORBED FORCES. [1961] [21]p. 34 refs. C. E. Trans. 1939; [DSIR LLU] M4064.
Order from OTS or SLA $2.60 61-28193

Trans. of Zhurnal Fiz[icheskoi] Khim[ii] (USSR) 1956, v. 30, no. 9, p. 2106-2121.

DESCRIPTORS: *Carbon black, *Hexanes, *Thermodynamics, Calorimeters, *Heat, *Adsorption, *Vapors, Graphite, Lattices.

By using an automatically recording calorimeter with a constant heat exchange and an adsorbing apparatus with a vacuum capillary microburette the differential heat and adsorption isotherms of the vapour of normal hexane may be determined on original oxidized and

graphitized samples of chemical carbon black. Graphitization of carbon black and the removal of the oxides make its surface more homogeneous and increases the adsorption, and the heat of adsorption, of hexane. The completion of a monolayer on a homogeneous surface is accompanied by the maximum heat of adsorption. In the monomolecular zone the absolute adsorption isotherm of hexane vapour on a graphitized sample obeys Langmuir's equation, whereas in the multimolecular zone it obeys the B E T equation and then the Halsey equation. The relation between the coverage of the surface and the free and total energy and entropy of adsorption of vapours were investigated. The corresponding standard values for adsorption and wetting were determined. The theoretical calculation for the energy of adsorption of hexane on graphite was carried out by summation of the interactions with 100 of the closest carbon atoms of the graphite lattice. It was shown that the dispersion interactions of the adsorbed molecules of a n-alkane is a linear function of the number of atoms in it.

Latyshev, L. A.
CALCULATING THE TEMPERATURE FIELDS IN AN INSUFFICIENTLY HEATED LIQUID UPON BOILING UNDER CONDITIONS OF FREE CONVECTION.
16 Oct 61 [11]p. 5 refs. FTD-TT-61-51. AD-265 805.
Order from OTS or SLA $1.60 61-28966

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1960, no. 3, p. 74-79.

DESCRIPTORS: *Liquids, Thermal conductivity, *Boiling, *Convection, *Thermodynamics, Temperature, Determination.

The proposed method of calculating temperature fields of an insufficiently heated liquid, based on the exhibition of a potential field, may be applied in a great number of practical calculations, when it is not necessary to determine the medium to extremely small nuclei, compared with the dimensions of the vortices. (Author)

Priselkov, Yu. A., Sapozhnikov, Yu. A., and Tseplyaeva, A. V.
MEASURING THE PRESSURE OF SATURATED BORON VAPOR. [1961] [5]p. 9 refs.
Order from OTS or SLA $1.10 61-28232

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Metallurgiya i Toplivo, 1960, no. 1, p. 134-137.

DESCRIPTORS: *Vapor pressure, Measurement, *Boron, Heat of sublimation, Thermochemistry, Thermodynamics.

The study deals with the determination of vapor pressure within the temperature range of 1651-1764°K by Knudsen's effusion method. The boron vapor pressure depends largely on the S/K ratio. Saturation is reached in the chamber only when the S/K_0 ratio is larger than 15,000-20,000.

Reznitskii, L. A. and Komyakov, K. G.
THE DETERMINATION OF THE LATENT HEATS OF FUSION OF $Na_2S_2O_7$ AND $NaHSO_4$ DERIVED FROM THE HEATING CURVES OBTAINED UNDER ADIABATIC CONDITIONS. [1961] [5]p. 11 refs.
Order from OTS or SLA $1.10 61-27989

Trans. of Moscow U. Vestnik. Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii (USSR) 1959, v. 14, no. 2, p. 199-202.

DESCRIPTORS: *Sodium compounds, *Sulfates, *Heat of fusion, Determination, *Calorimeters, Design.

The construction of a spherical calorimeter for the determination of thermodynamic quantities using the method of continuous heating under adiabatic conditions is described. Values were calculated for the heat of fusion of sodium bisulfate, $\Delta H = 2480$ cal/mol; the heat of fusion of sodium pyrosulfate, $\Delta H = 9760$ cal/mol; the heat of the polymorphous transformation of sodium pyrosulfate, $\Delta H = 1620$ cal/mol. (Author)

Smagina, E. I., Kutsev, V. S., and Ormont, B. I
A STUDY OF EQUILIBRIUM IN A ZIRCONIUM-NITROGEN SYSTEM AT HIGH TEMPERATURES AND THE DEPENDENCE OF THE FREE ENERGY OF FORMATION OF ZrN_x ON ITS COMPOSITION AND STRUCTURE. 27 July 61 [29]p. 31 refs. MCL-896/1+2 AD-261 785.
Order from OTS or SLA $2.60 61-27814

Unedited rough draft trans. of Problemy Fizicheskoi Khimii (USSR) 1959, v. 2, p. 118-131.
Another trans. is available from OTS or SLA $2.60 as 61-28607, JPRS-10232, 15 Sep 61 [24]p.

DESCRIPTORS: *Zirconium compounds, *Nitrides, Zirconium, Nitrogen, Chemical equilibrium, High temperature research, Thermodynamics, Refractory materials, Heat of formation, Synthesis, Thermochemistry, Phase studies, Chemical analysis, X-ray diffraction analysis, Molecular structure.

A method of studying equilibria in refractory nitride systems at 1500-2800°K was developed. The equilibrium in the system ZrN_x - N_2 was studied in the temperature range 2000-2800°K, the pressure range 0.1-300 mm·Hg, and a range of change in x from 0.7 to 1.0. The dependence of the equilibrium compositions on temperature and pressure was established. The composition ZrN is a special case. The decomposition equation equation used in the literature $ZrN = Zr + \frac{1}{2}N_2$ was not corroborated at the pressures and temperatures investigated by us. As the composition of ZrN_x changes, the heats and free energies of formation change considerably; this must be taken into account in thermodynamic calculations. As the composition changes from $ZrN_{0.56}$ to $ZrN_{1.0}$, the heats of formation change from 56,100 to 87,900 cal/mole. The conditions of formation of zirconium nitrides of given composition were studied, and a method of synthesizing them was developed. (Author)

Sterman, L. S.
THEORY OF HEAT EXCHANGE DURING BOILING IN TUBES. [1961] 8p. 4 refs.
Order from OTS or SLA $1.10 61-20529

Trans. of Zhur[nal] Tekh[nicheskoi] Fiz[iki] (USSR) 1954, v. 24, no. 2, p. 250-257.
Another trans. is available from ATS $13.50 as ATS-78N53R [1961] 8p.

DESCRIPTORS: Differential equations, *Heat transfer, *Boiling, *Thermodynamics, Pipes.

A system of differential equations is derived that describes, in hydraulic form, the heat exchange during boiling in tubes and establishes a general functional relationship between similarity criteria. The results are used to analyze relationships and criteria established earlier by G. N. Kruzhilin (Izvest. Akad. Nauk SSSR Otdel. Tekh. Nauk 1949: no. 5, 701) and by S. S. Kutateladze (Heat Transfer During Condensation and Boiling, Moscow, 1952; available in translation from OTS as 59-21191). (See also 61-13150)

Wave Propagation

Dolukhanov, M. P.
ON A METHOD OF ESTIMATING THE INTENSITY OF RADIO SIGNALS REFLECTED FROM THE LUNAR SURFACE. [1960] 6p. 3 refs. MDF D-141.
Order from OTS $0.50 62-11174

Trans. of #Radiotekh[nika] (USSR) 1960, v. 15, no. 5, p. 5-8.

DESCRIPTORS: *Moon, Surface area, *Radio signals, Reflection, Intensity, *Extraterrestrial radio waves, Radio wave, Propagation

Up to now, the losses in propagation, in the reflection of radio signals from the lunar surface, have been determined by means of the so-called "radar equation". It is shown that the same expression can be obtained for the losses if it is assumed that the reflected wave is formed within the limits of the first Fresnel demizone and if the curvature of the reflecting surface is taken additionally into account. The proposed method permits a physically more correct explanation of the phenomena which occur upon reflection from the moon. (Author)

Kalinin, Yu. K.
ON THE PROBLEM OF DIFFRACTION OF RADIO WAVES OVER THE NONUNIFORM SPHERICAL SURFACE OF THE EARTH. 16 Feb 61 [9]p. 4 refs.
F-TS-9857/1+2; AD-257 711.
Order from OTS or SLA $1.10 61-23670

Unedited rough draft trans. of #Radiotekhnika i Elektronika (USSR) 1958, v 3, no. 10, p. 1274-1279.

DESCRIPTORS: *Radio waves, *Wave transmission, Earth, Surface properties, Propagation, *Diffraction, Integral equations, Mathematical analysis, USSR.

A formula was obtained for the weakening function, when the course consists of n sections. Exceptional cases of a course run consisting of larger sections, and course in which one of the sections is small are considered. The formula for the weakening function was generalized for the case of a continuous change in the parameters of the course. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

THE BULGARIAN ACADEMY OF SCIENCES AFTER 9 SEP 44. 24 May 60, 90p. JPRS: 3291.
Order from OTS or SLA $8.10 60-31180

Trans. of mono. (reference book) Bulgarskata Akademiya na Naukite sled 9 Sep 44, Sofia, 1958, p. 3-159, 279-280, 291-292 and 295-296.

DESCRIPTORS: *Scientific organizations, Science, Bulgaria.

CONFERENCE OF SCIENTIFIC WORKERS OF KAZAKHSTAN: [SELECTED REPORTS] 28 Nov 61 [31]p. JPRS: 11370.
Order from OTS or SLA $3.60 62-13668

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Vestnik, 1961 [v. 17] no. 8[197] p. 15-35 and 46-48.

DESCRIPTORS: Conferences, *Science, *Scientific research, Geology, Mining engineering, Metallurgy, Chemical industry, Physics, Mathematics, Biology, Agriculture, Medical research, Social sciences.

Contents:
State of Science in Kazakhstan and its principal problems, by K. I Saptaev
The strength of science is in its practical application.

CURRENT ORGANIZATION AND ACTIVITIES OF THE POLISH ACADEMY OF SCIENCES (1959). 31 Aug 60 [193]p. JPRS: 3790.
Order from OTS or SLA $13.50 60-31694

Trans. of Nauka Polska, 1960, v. 8, no. 1(29) p. 1-52, 165-224, 247-255 and 257-348.

DESCRIPTORS: *Scientific organizations, *Scientific research, Research program administration, Poland, *Scientific personnel, Personnel.

Contents:
Scientific achievements in the 15 years of People's Poland, by T. Kotarbinski
The Position of the Academy of Sciences in the System of Organization of Scientific Research in Poland, by H. Jablonski
General Meeting of the Members of the Polish Academy of Sciences

New Members of the Polish Academy of Sciences
The Composition of the Polish Academy of Sciences
List of Scientific Positions, Committees and Commissions of the Polish Academy of Sciences
List of Scientific Societies Supported by the Polish Academy of Sciences
Department of the Polish Academy of Sciences in Krakow.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 51. 31 Oct 61 [52]p. JPRS: 10777.
Order from OTS or SLA $5.60 62-13690

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 3 (3 reports).

DESCRIPTORS: *Machine translation, Data, Processing, Numerical methods and procedures, Coding, Language, Vocabulary

Contents:
Composition of algorithms for the translation of whole number designations from 1 to 999999, by G. S. Tseitin
Problem concerning the structure of an intermediate language, by B. M. Leikina
The elimination of syntactical homonymy on the basis of formal description of context in modern English, by A. L. Vasilevskii

GENERAL MEETINGS OF ACADEMY OF 77 SCIENCES DEPARTMENTS. Chemistry: USSR no. 17. 3 Oct 61 [12]p. JPRS: 10390.
Order from OTS or SLA $1.60 61-28596

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, [v. 31] no. 6, p. 41-47.

DESCRIPTORS: Scientific organizations, Conferences, *Scientific research

IN THE PRESIDIUM OF THE ACADEMY OF SCIENCES USSR. 29 Nov 61 [5]p. JPRS: 11380.
Order from OTS or SLA $1.10 62-13645

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 4, p. 113-115.
Another trans. (p. 113-114) is available from OTS or SLA $2.60 in 62-13258, JPRS-10769, 25 Oct 61 [26]p.

DESCRIPTORS: *Scientific organizations, Neurology, Physiology, Chemistry, Organic compounds, Hydrology, Scientific personnel, Tests.

NEWS OF SOVIET SCIENCE. 28 Sep 61, 39p. JPRS: 10308.
Order from OTS $1.25 61-31631

Trans. of 22 selected articles from Jan-July 61 issues of 12 Russian newspapers.

DESCRIPTORS: *Newspapers, Scientific reports, *Conferences, Scientific personnel, Metallurgy, *Scientific organizations, Buildings, Rubber, Gravity, Agriculture, Chemical engineering, Medical personnel Social sciences.

Contents:
A new scientific society
Georgii Fedorovich Alaksandrov
Closer to life
A high award
An international conference at Dubna
Newspaper of the Siberian scientists
An all-union conference of metallurgists
A new scientific center for metallurgists
From theory to an experiment
Chemistry in the Ukraine
A new construction bulletin, by M. Pytlyarskii
A scientific research institute is being created
A new form of rubber, by V. Muradyan and S. Kuznetsov
Soviet conference on gravitation (no. 1)
Republican conference of Scientific and Higher School Workers of Turkmenistan
To improve the work of the scientific research institutions and that of the experimental-demonstration farms by all possible means
Chemistry and agricultural engineering, by R. Shakhkulyan
World forum of medical workers at Tashkent
A meeting of the Leningrad group of scientists
The militant scientific staff of the republic, by S. R. Sergienko
An appeal of the Republican Conference of Scientific workers to all the scientific workers of Soviet Armenia
To be in step with life, to serve the people in a selfless manner, by S. Sergienko.

THE OFFSET PRESS. 19 Feb 60, 4p. JPRS: 3011.
Order from OTS or SLA $1.10 60-31061

Trans. of mono. Offset Nyomda, Budapest, p. 609-611.

DESCRIPTORS: *Lithography, Printing, History, Hungary.

A discussion is presented of the history and the activities of the Offset Press, which was formed in 1949 by the merger of the Gyorgy Klosz & Son Graphic Arts Institute Corporation and the Hungarian Geographic Institute Corporation.

PHILOSOPHICAL PROBLEMS OF CYBERNETICS. 15 Dec 61 [306]p. 292 refs. JPRS: 11503.
Order from OTS or SLA $19.75 62-13719

Trans. of mono. Filosofskie Voprosy Kibernetiki, Moscow, 1961, 392p.

DESCRIPTORS: *Cybernetics, *Philosophy, History, Physiology, Control systems, Control, Labor, Digital

computers, Computers, Reflexes, Conditioned reflexes, Conditioned reflexes, Social sciences.

Contents:
On cybernetics and the area of its application, by S. M. Shalyutin
On the philosophical and social problems of cybernetics, by E. Kol'man
On the possibilities of cybernetics in view of the property of representation of matter, by B. S. Ukraintsev
Problems of control and cybernetics, by A. I. Berg
An approach to the history of the development of cybernetics, by A. V. Khramoi
Some problems in the science of control systems, by V. A. Il'in
On certain disputed questions of cybernetics, by V. N. Kolbanovskii
Physiology and cybernetics, by P. K. Anokhin
The dialectics of living nature and modern cybernetics, by Yu. P. Frolov
Cybernetics and labor, by V. N. Tipukhin
The role of analogies in cybernetics, by A. A. Fel'dbaum
The Congress on Cybernetics held in Namur (Belgium) brief survey, by V. A. Il'in
On the Second International Congress on Cybernetics (from material of the delegation from the Academy of Sciences USSR) by I. Ya. Aksenov
Bibliography, by A. V. Khramoi.

SCIENTIFIC CONFERENCES DEVOTED TO THE FORTIETH ANNIVERSARY OF THE TATARSKAYA ASSR (Nauchnye Konferentsii, Posvyashchennye 40-Letiyu TaSSR). 16 Oct 61 [12]p. JPRS: 10482.
Order from OTS or SLA $1.60 61-28923

Trans. of Kazanskii Meditsinskii Zhurnal (USSR) 1960 [v. 41] no. 5, p. 100-104.

DESCRIPTORS: *Conferences, *Scientific reports, *Medical research *Industrial medicine, *Otorhinolaryngology

Contents:
Kazan' Medical Institute (7-10 May 60) by V. N. Shubin
Kazan' Institute of Labor Protection (24-26 May 60) by E. T. Zemlyanitskaya
The Society of Otolaryngologists (8-10 June 60) by E. G. Arsen'ev

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS OF THE USSR. 17 Oct 61 [22]p. JPRS: 10664.
Order from OTS or SLA $2.60 62-13045

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1961, no. 4(165) p. 151-165.

DESCRIPTORS: Conferences, *Scientific organizations, Scientific reports, Scientific research.

Contents:
Appeal of the annual assembly of the Academy of Sciences Latvian SSR to all scientists and engineers of the republic
General assembly of the Academy of Sciences Latvian SSR held in 1961, by [Ya]. Magone
Resolution of the General Assembly of the Academy of Sciences Latvian SSR, 23 Feb 61
Meeting of the directors of the central committee, Latvian Communist Party, and the Council of Ministers Latvian SSR, by K. Graudin.

Belopolskaya, A. R. and Kovrigin, A. B.
ANALYSIS OF THE COMPLEX SENTENCE (GERMAN). Foreign Developments in Machine Translation and Information Processing no. 45. 28 Sep 61 [12]p. JPRS: 8966.
Order from OTS or SLA $1.60 61-28725

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 2.

DESCRIPTORS: *Machine translation, Data processing systems, Computers, Communications theory, *Language, Programming, Data storage systems, Coding, Abstracting, Information theory, Speech transmission, Documentation.

The role of the comma is discussed.

Kitov, A.
CYBERNETICS IN ECONOMIC ADMINISTRATION (Kibernetika v Upravlenii Khozyaistvom). 27 Oct 61 [24]p. JPRS: 10735.
Order from OTS or SLA $2.60 62-13321

Trans. of Ekonomicheskaya Gazeta (USSR) 1961, no. 4, p. 9-11.
Another trans. is available from OTS or SLA $1.60 as 62-13271, JPRS-10781, 25 Oct 61 [12]p.

DESCRIPTORS: *Automation, *Cybernetics, Communism, Economics

Kotelnikov, V. A.
SCIENTIFIC COOPERATION BETWEEN THE SOVIET UNION AND NORTH VIETNAM; THE SOVIET UNION AND VIETNAM UNCEASINGLY TIGHTEN THEIR SCIENTIFIC COOPERATION. 28 Sep 60, 4p. JPRS: 5582.
Order from OTS or SLA $1.10 60-41451

Trans. of Lao Dong (North Vietnam) 1960, no. 762, p. 3.

DESCRIPTORS: *Scientific research, Vietnam, USSR, Growth.

Shatrov, V. P., Bakeev, N. F., AND Cherepov, E. I.
ACADEMY OF SCIENCES INSTITUTIONS NEWS ITEMS. Chemistry: USSR no. 19. 3 Oct 61 [9]p. JPRS: 10392.
Order from OTS or SLA $1.10 61-28590

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 6, p. 90-94.

DESCRIPTORS: Symposia, *Political science, *Cellulose chemistry, Chemistry, *Explosives, Detonation.

Contents:
Meeting of the Soviet Association of Political(Science) of the State) Sciences (no. 1)
Discussion of problems of cellulose chemistry
The council for the use of blasting in the national economy.

Szanto, Lajos.
DIRECTION AND PLANNING OF SCIENTIFIC WORK IN THE USSR, FROM A STUDY TOUR MADE BY HUNGARIANS. 12 May 61, 8p. JPRS: 4606.
Order from OTS $0.50 61-31142

Trans. of Magyar Tudomany (Hungary) 1961, v. 5, no. 1, p. 51-55.

DESCRIPTORS: *Research program administration, *Universities, *Scientific organizations, Industrial research, Education.

Tarjan, Rezso
HUNGARIAN INVESTIGATIONS IN CYBERNETICS. 27 July 60, 20p. 24 refs. JPRS: 3619.
Order from OTS or SLA $1.60 60-31459

Trans. of Magyar Tudomany (Hungary) 1960, no. 3, p. 135-151.

DESCRIPTORS: Scientific research, *Cybernetics, Hungary.

Zhurbitskii, Z. I., Verzilin, N. N. and others.
SCIENTIFIC SESSIONS, CONFERENCES AND MEETINGS. Chemistry: USSR no. 20. 3 Oct 61 [15]p. JPRS: 10393.
Order from OTS or SLA $1.60 61-28591

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, [v. 31] no. 6, p. 95-102.

DESCRIPTORS: Conferences, *Plants, Nutrition, Growth, *Data transmission systems, Communication systems, *Economics, *Philosophy.

Communication Theory

HERALD OF COMMUNICATIONS, 1956, NO. 9(198). 31 Oct 61 [189]p. JPRS: 7064
Order from OTS or SLA $13.00 62-13273

Trans. of Vestnik Svyazi (USSR) 1956 [v. 16] no. 9(198) including covers.

DESCRIPTORS: Communication systems, *Communication equipment, *Communications theory, Periodicals, Coaxial cables, Television receivers, Voltage, Detectors, Radio broadcasting, Control, Propaganda, Telephone communication systems, Radio relay systems, Radio towers, Speech, Translations, Telegraph transmitters, Radio communication systems, Costs, Telegraph systems, Recreation, Inventions, Personnel, Tests.

Contents:
New briefs-technics of communication technical propaganda at communications enterprises should be activated in every possible way
Introduction of equipment for radiofication through telephone circuits
Radio relay lines with long distances between repeater substations
Erection of trussed towers
Schematics of systems for the simultaneous translation of speeches into various languages
Adjustment of relay in bias circuit SORS and preventive check-up of contact system in ST-35 transmitters
How are we striving to lower costs in a wired radio center
Experience in the operation of subscriber telegraphy
Communications in the central stadium imeni, by V. I. Lenin
Interrayon controller conference
Work experience of an interrayon inspector
Joint servicing of communications and radio broadcasting facilities in Kalinin
Creative initiative of communications men is a guarantee of industrial progress
Rationalization and invention
Creativeness of innovators and inventors apparatus for checking installation ATS-47
ATS (automatic telephone stations) with crossbar switching system
Criticism and bibliography
Information—In the college of the Ministry of Communications USSR
Internal philatelic exhibition in Finland
Technique of communications in foreign countries.

HERALD OF COMMUNICATIONS, 1958, NO. 6(219). 19 Oct 61 [167]p. JPRS: 7011.
Order from OTS or SLA $12.00 62-13010

Trans. of Vestnik Svyazi (USSR) 1958 [v. 18] no. 6(219) including covers.

DESCRIPTORS: Communication systems, Communication equipment, *Communication theory, Periodicals, Panel boards (Electricity), Loudspeakers, Public address systems, Wavemeters, Generators, Automation, Telephone communication systems, Radio relay systems, Remote control systems, Control systems, Telegraph equipment, Postal systems, Machines, Conveyors, Coaxial cables, Radio broadcasting, Rural areas, Television communication systems, Economics, Design, Radio operators, Tests.

Contents:
Automation and mechanization will be widely adopted at communication plants (editorial)
The "Vesna" radio-relay system with automatic intermediate stations, by N. I. Kalashnikov.
Automation of the telegram processing at the Stalinabad Telegraph, by M. V. Pervun.
Process mechanization at the Kiev main post office, by P. I. Korepanov.
Introducing mechanization in the post-transportation station of the Moscow RR junction, by G. G. Shakh-Nazarov.
Economic effect from using unattended repeater stations on the cable trunk lines, by A. V. Razgovorov.

Interurban coaxial cables and their electric characteristics, by E. V. Kirillov and N. S. Struykina.
Development of multiprogram broadcasting in Georgia, by G. A. Khristesashvili.
Adoption of segregate-maintenance method for subscriber's equipment at the Moscow city telephone exchange, by E. P. Dubrovskii
Communication facilities must serve kolkhozes, by B. A. Kuybyshev.
Rural communication means will be developed and perfected
The initial reconstruction of the Moscow TV center has been completed, by I. V. Ostrovskii.
Communication construction projects must be built and put in operation quicker
Conference of the Moscow construction men
Efficiency-suggestion activities must be improved in the communication organizations, by A. V. Gavrilov.
Advanced workers of socialist emulation
Studying the foreign experience and international scientific-engineering cooperation, by M. R. Reznikov.
A remarkable date in the history of soviet radio engineering, by V. G. Vasil'kov.
Young communication hams
New telephone set.

Vogl, W. and Ziegler, A.
CROSS TALK IN SHIELDED OFFICE LINES. [1961] 14p. 9 refs.
Order from SLA $1.60 62-10220

Trans. of NTZ [Nachrichtentechnische Zeitschrift] (West Germany) 1959, v. 12, no. 11, p. 561-565.

DESCRIPTORS: *Communication systems, *Transmission lines, Coaxial cables, *Shielding, Electromagnetic shielding, Attenuation, Radio interference, Interference.

SOCIAL SCIENCES

BULLETIN OF THE UNIVERSITY OF BELGRADE 1958, VOL. 2, NOS. 7, 9-10, AND 12[SELECTED ARTICLES]. 30 June 60, 72p. JPRS: 3486.
Order from OTS or SLA $7.60 60-31337

Trans. of Belgrad U. Glasnik (Yugoslavia) 1958, v. 2, no. 7, p. 175-178 and 190-191; no. 9, p. 243-266; no. 10, p. 271-285; no. 12, p. 315-318 and 322-327.

DESCRIPTORS: *Universities, *Instructors, Students, *Research program administration, Training, Yugoslavia, *Education.

THE GLORIOUS JUBILEE. 3 Oct 61 [9]p. JPRS: 10407
Order from OTS or SLA $1.10 61-28618

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Vestnik, 1961 [v. 17] no. 6(195) p. 3-6.

DESCRIPTORS: *Communism, *Propaganda.

For the past forty years, Soviet Kazakhstan has been growning and developing under the wise guidance of the Central Committee of the Communist Party of the Soviet Union and one of its fighting regiments--the Communist Party of Kazakhstan. Born out of a consolidation of isolated Marxist circles and groups, the Communist Party of Kazakhstan grew into an organizationally-hardened army of loyal Leninists. Throughout this period, it has always stood in the vanguard, urging the workers on to new victories on the war fronts and during the years of peaceful creative endeavor. (Extract)

THE MOSCOW HIGHER TECHNICAL SCHOOL (1917-55). 1 Sep 61 [89]p. JPRS: 4928.
Order from OTS or SLA $8.10 61-28385

Trans. of mono. 125th Anniversary of the Moscow Higher Technical School, Moscow, 1955, p. 282-361.

DESCRIPTORS: *Universities, History, Scientific research, Scientific personnel, *Education.

Firyubin, Nikolai.
EUROPEAN ECONOMIC COOPERATION; A RELIABLE ROAD TO PEACE AND PROGRESS. 1960 [3]p. [DSIR NLL] M 1882.
Order from OTS or SLA $1.10 61-13205

Abridged trans. from Ekonomicheskaya Gazeta (USSR) [1960] 22 Apr.

DESCRIPTORS: *Economics, Economic conditions, *Commerce, Fuels, Power plants, Water, Transportation, Europe, USSR.

The USSR Deputy Foreign Minister explains Soviet proposals which have been put forward at the present session of the United Nations Economic Commission for Europe, which opened in Geneva on April 20.

Grundke, Walter.
THE EDUCATIONAL POSSIBILITIES OF THE TERMINAL CLASS OF THE ELEMENTARY SCHOOL (Erziehliche Möglichkeiten in der Abschlussklasse der Volksschule). [1961] [13]p.
Order from SLA $1.60 61-20426

Trans. of die Neue Lanschule (West Germany) 1958, v. 8, Mar, p. 550-554.

DESCRIPTORS: *Education, Germany, Students, Training, Effectiveness.

Kudryatsev, V. D.
TOPICS OF SCIENTIFIC RESEARCH WORKS, IN SIBERIA AND THE FAR EAST, 1959-65; SOCIAL SCIENCES, BY I. P. PANKOV AND OTHERS: BOOK REVIEW (Tematika Nauchno-Issledovatel'nykh Rabot v Sibiri i na Dal'nem Vostoke na 1959-65. Obshchestvennye Nauki). 7 Sep 61 [10]p. JPRS: 10060.
Order from OTS or SLA $1.10 61-28409

Trans. of Akademiya Nauk SSSR. Sibiroskoe Otdelenie Izvestiya, 1960, no. 6, p. 124-126 (review of mono. pub. Novosibirsk, 1959, 122p.).

DESCRIPTORS: Scientific research, Siberia, *Social sciences, Philosophy, *Education, Biology.

Kursanov, G. A.
EXPERIENCE AND SCIENTIFIC KNOWLEDGE (Praktika i Nauchnoe Poznanie). 6 Sep 61 [13]p. JPRS: 10027.
Order from OTS or SLA $1.60 61-28039

Trans. of Priroda (USSR) 1961 [v. 50] no. 4, p. 3-8.

DESCRIPTORS: *Communism, Training, Scientific intelligence, Culture, Political science.

Only a Marxist-Leninist concept of experience makes it possible to evaluate the role of experience in the knowledge of the world, objectively and thoroughly. (Extracted)

Rachkov, P. A.
THOUGHT AND LANGUAGE. 27 July 61 [32]p. 11 refs. JPRS: 8632.
Order from OTS or SLA $3.60 61-27289

Trans. of mono. Myshlenie i Yazyk, Moscow, 1960, 39p.

DESCRIPTORS: *Language, Vocabulary, Philosophy

Discussions are presented on specific features of language and thought, and the dialectical unity of language and thought. Language is shown to be a tool in the struggle and development of society.

Sokolova, Z. P.
CONFERENCE ON PROBLEMS OF ACCLIMATIZATION AND NUTRITION OF THE PEOPLE OF THE FAR NORTH [HELD IN] MOSCOW, 28 NOV-1 DEC 60 (Soveshchanie po Voprosam Akklimatizatsii i Pitaniya Naseleniya na Krainem Severe). 8 Sep 61 [11]p. JPRS: 10055.
Order from OTS or SLA $1.60 61-28407

Trans. of Sovetskaya Etnografiya (USSR) 1961, no. 2, p. 122-123.

DESCRIPTORS: *Climatic factors, *Adjustment (Psychology), *Nutrition, Population, *Economics, Arctic regions, Medical research.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5182
Kasatkin, Andrey Georgiyevich.
BASIC PROCESSES AND EQUIPMENT OF CHEMICAL TECHNOLOGY. 7TH ED. (Osnovnyye protsessy i apparaty khimicheskoy tekhnologii. Izd. 7) Moscow, Goskhimizdat, 1960. 829p. Errata slip inserted. 25,000 copies printed.

BR-SOV/5481
Rabinovich, Isaak Moiseyevich
FUNDAMENTALS OF THE STRUCTURAL MECHANICS OF SYSTEMS OF TRUSSES (Osnovy stroitel'noy mekhaniki sterzhnevykh sistem) 3rd ed., rev. and enl. Moscow, Gosstroyizdat, 1960. 518p. Errata slip inserted. 25,000 copies printed.

BR-SOV/5603
Levin, Lev Mikhaylovich
RESEARCH IN THE PHYSICS OF ROUGHLY DISPERSED AEROSOLS (Issledovaniya po fizike grubodispersnykh aerozoley) Moscow, Izd-vo An SSSR, 1961. 266p. Errata slip inserted. 1,500 copies printed.

BR-SOV/5607
Pritula, Vsevolod Aleksandrovich
PROTECTION OF INDUSTRIAL UNDERGROUND PIPING AGAINST CORROSION (Zashchita zavodskikh podzemnykh truboprovodov ot korrozii) Moscow, Metallurgizdat, 1961. 384p. Errata slip inserted. 4,700 copies printed.

BR-SOV/5616
Glizmanenko, Dmitriy L'vovich, and Georgiy Borisovich Yevseyev
GAS WELDING AND CUTTING OF METALS (Gazovaya svarka i rezka metallov) 2d. ed., rev. Moscow, Mashgiz, 1961. 447p. 65,000 copies printed.

BR-CZECH/5646
Drastik, Frantisek
RAILROAD MATERIALS (Zeleznicni materialy) [Prague] Dopravni nakl., 1959. 389p. 1500 copies printed.

BR-SOV/5657
Rogitskiy, Stanislav Andreyevich
NEW METHOD OF DESIGNING FOR STRENGTH AND STABILITY (Novyy metod rascheta na prochnost' i ustoychivost') Moscow, Mashgiz, 1960. 351p. 7,000 copies printed.

BR-CZECH/5663
Pekarek, Ludek
THERMONUCLEAR ENERGY (Termonuklearni energie) Prague, Orbis, 1959. 194p. (Series: Mala moderni encyklopedie, sv. 13) 17,000 copies printed.

BR-SOV/5669
Pravda, Moscow.
MAN'S FIRST FLIGHT INTO THE COSMOS; MATERIALS PUBLISHED IN "PRAVDA" (Pervyy polet cheloveka v kosmos; materialy, opublikovannyye v 'Pravde') Moscow, 1961. 343p. 200,000 copies printed.

BR-SOV/5673
Grebencha, Mikhail Kuz'mich, and Sergey Iosifovich Novoselov
COURSE IN MATHEMATICAL ANALYSIS (Kurs matematicheskogo analiza) v. 1. 5th. ed. Moscow, Gosizdat "Vysshaya shkola," 1960. 543p. 22,000 copies printed.

BR-SOV/5674
Smogorzhevskiy, Aleksandr Stepanovich, and Yelena Samsonovna Stolova
HANDBOOK ON THE THEORY OF PLANE CURVES OF THE THIRD ORDER (Spravochnik po teorii ploskikh krivykh tret'yego poryadka) Moscow, Fizmatgiz, 1961. 263p. 10,000 copies printed.

BR-SOV/5677
Orakhelashvili, Merab Mamiyevich
WEAR RESISTANCE OF HYDRAULIC REACTION TURBINES (Iznosostoykost' reaktivnykh gidroturbin) Moscow, Gosenergoizdat, 1960. 108p. 2500 copies printed.

BR-SOV/5682
Vul'fson, Naum Isaakovich
INVESTIGATION OF THE CONVECTIVE MOTIONS IN THE FREE ATMOSPHERE (Issledovaniye konvektivnykh dvizheniy v svobodnoy atmosfere) Moscow, Izd-vo AN SSSR, 1961. 251p. Errata slip inserted. 1,500 copies printed.

BR-SOV/5690
Akademiya nauk Kazakhskoy SSR. Institut yadernoy fiziki.
PHYSICAL METALLURGY AND PRESSWORKING OF METALS (Metallovedeniye i obrabotka metallov davleniyem) Alma-Ata, 1961. 183p. (Series: Trudy Instituta yadernoy fiziki, t. 4) 2,450 copies printed.

BR-SOV/5694
Rabinovich, Avram Nakhimovich
FULL MECHANIZATION AND AUTOMATION OF MANUFACTURING PROCESSES IN THE MACHINE AND INSTRUMENT INDUSTRIES (Kompleksnaya mekhanizatsiya i avtomatizatsiya proizvodstvennykh protsessov v mashinostroyenii i priborostroyenii) Kiyev, Gostekhizdat, UkrSSR, 1961. 535p. 10,000 copies printed.

BR-SOV/5695
Pribyl, Josef
CERTAIN PROBLEMS IN THE THEORY OF CASTING (Nekotoryye voprosy liteynoy teorii) Moscow, Mashgiz, 1961. 138p. 4000 copies printed. Translated from the Czech by A. A. Zhukov, Engineer.

BR-SOV/5723
Saakyan, G. S.
ENERGY SPECTRUM AND NUCLEAR INTERACTION OF COSMIC RADIATION PARTICLES (Energeticheskiye spektry i yadernyye vzaimodeystviya chastits kosmicheskogo izlucheniya) Yerevan, Izd-vo Yerevanskogo univ., 1960. 113p. Errata slip inserted. 1,000 copies printed.

BR-SOV/5726
Moscow. Universitet.
TRANSACTIONS OF THE SEMINAR ON VECTOR AND TENSOR ANALYSIS WITH THEIR APPLICATION IN GEOMETRY, MECHANICS, AND PHYSICS. NO. 11 (Trudy seminara po vektornomu i tenzornomu analizu s ikh prilozheniyami k geometrii, mekhanike i fizike. vyp. 11.) [Moscow] 1961. 314p. 2,500 copies printed.

BR-SOV/5738
Iskanderov, Khakim Mukhametzyanovich, and Stepan Yevdokimovich perekrestov
APPLICATION OF PLASTIC MATERIALS IN THE BUILDING AND REPAIRING OF SHIPS (Primeneniye plastmassovykh materialov v sudostroyenii i sudoremonte) Moscow, Izd-vo "Morskoy transport," 1960. 112p. 1500 copies printed.

BR-SOV/5745
Averbukh, Aron Moiseyevich, and Khariton Aronovich Rybak
PROBLEMS IN RELAY PROTECTION AND METHODS FOR THEIR SOLUTION (Zadachi po releynoy zashchite i metody ikh resheniya) Moscow, Gosenergoizdat, 1961. 351p. Errata slip inserted. 12,000 copies printed.

BR-POL/5746
Dichter, Wilhelm, and others.
ROCKETS AND GUIDED MISSILES. V. 2: MOTORS, PROPELLANTS AND THEORY OF FLIGHT; ALBUM (Rakiety i pociski kierowane. Cz. 2: Silniki, materiały pędne, teoria lotu album) Warsaw, Wydawn. Ministerstwa Obrony Narodowej, 1960. 343p. (Series: Biblioteka wiedzy wojskowej. Seria IV) Errata slip inserted. 3,000 copies printed.

BR-SOV/5748
Pavlushkin, Nikolay Mikheyevich
SINTERED CORUNDUM (Spechennyy korund) Moscow, Gosstroyizdat, 1961. 208p. Errata slip inserted. 1500 copies printed.

BR-SOV/5752
Gorbunov, G. M.
STABILIZATION OF THE FLAME AND THE DEVELOPMENT OF THE COMBUSTION PROCESS IN A TURBULENT FLOW; COLLECTION OF ARTICLES (Stabilizatsiya plameni i razvitiye protsessa sgoraniya v turbulentnom potoke: sbornik statey) Moscow, Oborongiz, 1961. 169p. Errata slip inserted. 2,650 copies printed.

BR-SOV/5753
Nesmeyanov, Andrey Nikolayevich
VAPOR PRESSURE OF CHEMICAL ELEMENTS (Davleniye para khimicheskikh elementov) Moscow, Izd-vo AN SSSR, 1961. 395p. Errata slip inserted. 4,000 copies printed.

BR-SOV/5754
Zasorin, Sergey Nikolayevich, and others.
GAS-FILLED AND VACUUM-TUBE RECTIFIERS (Ionnyye i elektronnyye preobrazovateli) Moscow, Transzheldorizdat, 1961. 306p. 8,000 copies printed.

BR-SOV/5755
Sveshnikov, Aram Arutyunovich
APPLIED METHODS OF THE THEORY OF RANDOM FUNCTIONS (Prikladnyye metody teorii sluchaynykh funktsiy) Leningrad, Sudpromgiz, 1961. 251p. Errata slip inserted. 10,000 copies printed.

BR-SOV/5759
Azernikov, Valentin Zakharovich
FROM A MATCH TO ROCKET FUEL (Ot spichki - k raketnomu toplivu) [Moscow] Izd-vo TsK VLKSM "Molodaya gvardiya," 1961. 142p. 15,000 copies printed.

BR-SOV/5769
Obolentsev, Roman Dmitriyevich, and Anna Vasil'yevna Mashkina
HYDROGENOLYSIS OF ORGANIC SULFUR PETROLEUM COMPOUNDS (Gidrogenoliz seraorganicheskikh soyedineniy nefti) Moscow, Gostoptekhizdat, 1961. 143p. 2,100 copies printed.

BR-SOV/5770
Yakovchuk, Nikolay Stepanovich, and others.
JUNCTION TRANSISTORS (Ploskostnyye tranzistory) Leningrad, Sudpromgiz, 1961. 262p. 15,700 copies printed.

BR-SOV/5774
Al'tshuler, Semen Aleksandrovich, and Boris Mikhaylovich Kozyrev
ELECTRON PARAMAGNETIC RESONANCE (Elektronnyy paramagnitnyy rezonans) Moscow, Fizmatgiz, 1961. 368p. 10,000 copies printed.

BR-SOV/5776
Martynov, Dmitriy Yakovlevich
COURSE IN PRACTICAL ASTROPHYSICS (Kurs prakticheskoy astrofiziki) Moscow, Fizmatgiz, 1960. 508p. 4500 copies printed.

BR-SOV/5780
Erglis, Kronid Eduardovich, and Igor' Pavlovich Stepanenko
ELECTRONIC AMPLIFIERS (Elektronnyye usiliteli) Moscow, Fizmatgiz, 1961. 487p. 25,000 copies printed.

BR-SOV/5781
Bedel', Vladimir Konstantinovich
LOW-PRESSURE CASTING (Lit'ye pod nizkim davleniyem) Moscow, Mashgiz, 1961. 227p. 10,000 copies printed.

BR-SOV/5782
Silin, Viktor Pavlovich, and Anri Amvrosiyevich Rukhadze
ELECTRO-MAGNETIC PROPERTIES OF PLASMA AND PLASMA-LIKE MEDIA (Elektromagnitnyye svoystva plazmy i plazmopodobnykh sred) Moscow, Gosatomizdat, 1961. 243p. Errata slip inserted. 6,500 copies printed.

BR-SOV/5795
Boyko, V. Ye.
SOVIET FERROUS METALLURGY IN THE YEARS 1959 - 1965; ACCORDING TO MATERIALS TAKEN FROM PUBLIC LECTURES . . . (Chernaya metallurgiya SSSR v 1959 - 1965 gg. ; po materialam publichnoy lektsii. . .) Moscow, Metallurgizdat, 1960. 43p. Errata slip inserted. 3200 copies printed.

BR-SOV/5800
Smirnov, Vasiliy Sergeyevich, and others.
LONGITUDINAL PERIODIC-PROFILE ROLLING (Prodol'naya periodicheskaya prokatka) Moscow, Mashgiz, 1961. 254p. 6000 copies printed.

BR-SOV/5804
Fialko, Ye. I.
RADAR METHODS OF METEOR OBSERVATION (Radiolokatsionnyye metody nablyudeniya meteorov) Moscow, Izd-vo "Sovetskoye radio, " 1961. 111p. Errata slip inserted. 3000 copies printed.

BR-SOV/5823
Galkin, Nikolay Petrovich, and
Vladislav Borisovich Tikhomirov
PRINCIPAL PROCESSES AND EQUIPMENT IN URANIUM PRODUCTION (Osnovnyye protsessy i apparaty tekhnologii urana) Moscow, Gosatomizdat, 1961. 218p. 5000 copies printed.

BR-SOV/5826
Vinogradov, Rostislav Ivanovich, and
Aleksey Vasil'yevich Minayev
AIRCRAFT IN THE USSR; A BRIEF OUTLINE OF THEIR DEVELOPMENT (Samolety SSSR; kratkiy ocherk razvitiya) 2d. ed., rev. and enl. Moscow, Voyenizdat M-va obor. SSSR, 1961. 297p. 11,500 copies printed.

BR-SOV/5827
Raushenbakh, Boris Viktorovich
OSCILLATORY COMBUSTION (Vibratsionnoye goreniye) Moscow, Fizmatgiz, 1961. 500p. 7,000 copies printed.

TRANSLATIONS IN PROCESS

ACTA BIOCHIMICA POLONICA, 1962 [VOL. 62].
PL-480 simultaneous publication in English in process.

COMBUSTION IN TURBULENT FLOW.
PL-480 mono. Gorenie v Turbulentnom Potoke, Moscow, 1959, 167p.

GAS DYNAMICS AND PHYSICS OF COMBUSTION.
PL-480 mono. Gazodinamika i Fizika Goreniya, Moscow, 1959 170p.

THE MATHEMATICS OF THE THEORY OF THE MOMENT OF THE QUANTITY OF MOTION.
PL-480 mono. Matematicheskii Appart Teorii Momenta Kolichestva Dvizheniya Vilna 1960 242p.

NUCLEONICS, 1962 [VOL. 7].
PL-480 simultaneous publication in English of Nukleonika (Poland) 1962 v. 7.

Bark L. S. Ganson, P. P. and Meister, N. A.
TABLES OF THE SPEED OF SOUND IN SEA WATER.
Mono. Tablitsy Skorosti Zvuka v Morskoi Vode Moscow, 1961, 182p.
Available from ATS $15.50 in early Apr 62.

Bataling, A. M., Vasyukova N. G., and Istoshin, Yu. V.
AN ATTEMPT TO CALCULATE THE HEAT BUDGET OF THE SEA OF OKHOTSK [AND] THE WATER TEMPERATURE OF THE SEA OF JAPAN AND THE PROSPECTS OF ITS PROGNOSIS.
[Akademiya Nauk SSSR]. Okeanograficheskaya Komissiya. Trudy, 1960 v. 7, p. 37-98.

Berenbeim, D. Ya.
PERENNIAL FLUCTUATIONS OF THE BLACK SEA LEVEL AND THE DRAINAGE OF RIVERS(Mnogoletnie Kolebaniya Urovnya Chernogo Morya i Rochnoi Stok).
PL-480 Meteorologiya i Gidrologiya (USSR) 1959 [no. 1] p. 44-46.

Buyanov, N. F.
A SHORT RADAR DESCRIPTION OF A CRUISE IN THE BLACK SEA: FAR EAST (Kratkoe Radiolokatsionnoe Opisanie Marshruta Chernoe More: Dal'nii Vostok).
Morskoi Transport (USSR) 1960, no. ?, p. 1-26.

Chernyak, K. I.
EPOXY COMPOUNDS AND THEIR APPLICATION.
Unidentified mono. pub. Leningrad, 1959.

Chernyi, G. G.
HYPERSONIC GAS FLOW.
PL-480 mono. Techeniya Gaza s Bol'shoi Sverkhzvukovoi Skorost'yu, Moscow, 1959, 220p.

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